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首次發行：2008.11.03	J
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光寶管控物質標準
**LITE-ON Controlled
Substances Specification**

9713100001

Revision: **J**

ESTABLISHED 2008.11.03
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核准 Approved	審核 Reviewed	擬案 Prepared
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版次 Revision	改版簡述 (修改內容以藍色字體顯示) Brief Description of change (revised content will be in blue)	發行日期 Date
A	<p>本文件初版，文號由9916000003改至9713100001</p> <p>Initial Release. Changed Doc No. from 9916000003 to 9713100001</p>	2008.11.03
B	<p>1. 適用產品範圍加入家用多媒體產品 Added Home-used multimedia products into Scope</p> <p>2. 更新附件7.1承認不使用證明至H版，納入無鹵要求，因此廢除使用無鹵不使用證明。管控物質項目17其管控方式，將由簽署附件7.1來完成。 Updated Attachments 7.1, Non-Use certificate for Parts Approval to version H (to include HF requirement), therefore Non-Use certificate for Halogen Free will no longer use. Controlled manner for Item 17 of controlled substances, will be completed by signing the attachment 7.1</p> <p>3. 修改5.5部份描述 Revised some description in 5.5</p> <p>4. 修改管控物質項目R7及17-2，關於PVC的使用規定 For item R7 and 17-2 of Controlled Substances, revised the rule of using PVC</p> <p>5. 其他微小修正 Some minor revise</p>	2008.11.19
C	<p>1. 更新參考文獻SONY SS-00259至第8版 Updated References SS-00259 to 8 edition</p> <p>2. 新增參考文獻Toshiba之規範 Added Toshiba spec into References</p> <p>3. 因應客戶HP要求，變更item 20 HBCDD由三級提升至二級管控，並設定廢止時間為2011.07.01 Changed item 20 – HBCDD from Lv3 to Lv2, and set up the banned date to be 2011.07.01 by HP request</p>	2009.03.27
D	<p>1. 增列Item R8電池相關規定 Added Item R8 battery regulations</p> <p>2. 因應客戶要求，將HBCDD(Item 20)的禁用日期，提前至2010.01.01 Due to customers requests, advanced the date of banning HBCDD(Item 20) from 2011.07.01 to 2010.01.01</p> <p>3. 因應客戶要求，Item 37 (特定鄰苯二甲酸鹽)的部份修訂 Due to customer request, revised some description in item 37 (Specific phthalates).</p>	2009.09.09

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	<ol style="list-style-type: none"> 4. 因應客戶要求，Item 32(PAHa)其管制等級提升至1級 (立即禁用)，且限值含量修訂。Due to customers requests, changed the level of Item 32 (PAHs) from Level 3 to Level 1 (Banned immediately) and revise the Threshold Limit 5. 新增Item 41 – REACH 高關注物質及相關之表32及33 Added Item 41 for REACH SVHC in Table 32 and 33 6. 參考文獻新增 “Pegatron”技術標準 Add “Pegatron” standard into References 7. Email 信箱改至環境專用信箱 Email address change to <u>Environment @liteonit.com</u> 8. 因應RoHS 2，修改6. 附錄之RoHS豁免清單 Based on RoHS 2, revised RoHS Exemptions of 6. Appendix. 9. 更新Item 3 砷的要求 Updated Arsenic(As) requirement 10. 更新Item 12二氯化鈷的要求 Updated Item 12 Cobalt dichloride (CoCl₂) requirement 11. 更新Item 15 甲醛的要求 Updated Item 15 Formaldehyde requirement 12. 更新Item 12 聚氯乙烯(PVC)的要求 Updated Item 12 Polyvinyl chloride (PVC) requirement 13. 新增Item 17-5 溴化耐燃劑 (BFRs)的要求 Added Item 17-5 Brominated Flame Retardants (BFRs) requirement 14. 新增Item 17-6 氯化耐燃劑 (CFRs)的要求 Added Item 17-6 Chlorinated Flame Retardants (CFRs) requirement 15. 新增Item 26-2 氟化溫室氣體的要求 Added Item 26-2Fluorinated Greenhouse Gases requirement 16. 新增Item 28 高氯酸鹽的要求Added Item 28 Perchlorates requirement 17. 提升Item 29-2 全氟辛烷硫磺酸(29-2)的3級要求至2級 Reclassified level 3 of Item 29-2 PFOS into level 2. 18. 新增Item 41REACH 15項高關注物質的要求 Added Item 41 REACH 15 SVHC requirement 19. 新增Item 42 磷酸三-2-氯乙酯的要求 Added Item 42 Tris(2-chloroethyl)phosphate requirement 20. 新增Item 43 富馬酸二甲酯 (DMF)的要求 Added Item 43 Dimethylfumarate (DMF) requirement 21. 新增Item 44 二-μ-氧-正丁基錫羥基硼烷的要求 	
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	<p>Added Item 44 Di-μ-oxo-di-n-butylstanniohydroxyborane requirement</p> <p>22. 新增Item 45 木、紙及其他植物材質產品的要求 Added Item 45 Wood, Paper and other Plant-based Products requirement</p>	
E	<ol style="list-style-type: none"> 1. 適用範圍新增固態硬碟 Add SSD into Scope. 2. 更新客戶華碩HSF技術標準S-AT2-001至第10版 Updated customer ASUS spec S-AT2-001 to edition 10 3. 更新客戶SONY技術標準SS-00259至第9版 Updated customer SONY spec SS-00259 to edition 9 4. 更新客戶微軟技術標準H00594至第T版 Updated customer MS spec H00594 to edition T 5. 2009.12.07, 歐洲化學總署已同意第二批高關注物質候選清單, 新增中文注釋於表33 ECHA has agreed a further 15 SVHC Candidate List II, added Chinese description in Table 33 6. 修改標題Standard為Specification Revised title from Standard to Specification 7. 修改R1, 鎘 Revised item R1, Cd 8. 修改R2, 鉛 Revised item R2, Pb 9. 修改R3, 汞 Revised item R3, Hg 10. 修改R8-1, 電池要求 Revised item R8-1, Battery requirement 11. 項目 RoHS 2 – DEHP, BBP, DBP及HBCDD期限已到(2010.01.01), 上升為一級禁用物質 Item RoHS 2 – DEHP, BBP, DBP及HBCDD have been banned and updated to Level 1 12. 修改項目7-2, 氧化鈹, 刪除3級, 將「所有用途」上升為「1級」管控對象。Revised item 7-2, (BeO), deleted Level 3 and “All uses” is classified into Level 1. 13. 項目13, 戴奧辛類的限值由5ppm縮至0.005ppm The limit of item 13, Dioxins series is revised from 5ppm to 0.005ppm. 14. 項目17-2, PVC禁用期限延至2011年底, 配合無鹵計劃 Item 17-2, the date of ban on delivery extended to 2011/E 15. 項目20, HBCDD期限已到(2010.01.01), 上升為一級禁用物質 	2010.05.31

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	<p>Item 20, HBCDD has been banned and updated to Level 1</p> <p>16. 項目23, 鎳(Ni)的限值由0.5 µg/cm²/week縮至0.2 µg/cm²/week The limit of item 23, Nickel (Ni) is revised from 0.5 µg/cm²/week to 0.2µg/cm²/week</p> <p>17. 修改項目29-2, 全氟辛烷硫磺酸 Revised item 29-2, (PFOS)</p> <p>18. 項目39 TBBP-A, 上升為一級禁用物質 Item 39 TBBP-A updated to Level 1 banned substance</p> <p>19. 修改項目43, 富馬酸二甲酯 (DMF)的管控對象 Revised controlled target of item 43 DMF</p> <p>20. 項目44, DBB的限值由1000ppm縮至100ppm The limit of item 44, DBB is revised from 1000ppm to 100ppm.</p> <p>21. 新增項目46, 二丁基錫化合物(DBT) Add item 46 DBT</p> <p>22. 新增項目47, 二辛基錫化合物(DOT) Add item 47 DOT</p> <p>23. 新增項目48, 六氯丁二烯 Added item 48 Hexachlorobutadiene</p>	
F	<p>1. 新增電池定義於3.4 Add the definition of Battery in 3.4</p> <p>2. 表2“限制含量”欄位名稱, 修改為“標準/限制含量” Table 2 “Threshold Limit” revise to “Criteria/Threshold Limit”</p> <p>3. 部份項目於標準/限制含量中, 加入了禁止刻意添加的要求, Some items add “Intentionally added is banned” requirement in Criteria/Threshold Limit</p> <p>4. 修改項目R1~R8, Revised items R1~R8</p> <p>5. 刪除DEHP、BBP、DBP及HBCDD重覆定義的部份 Delete duplicate definition of DEHP, BBP, DBP and HBCDD.</p> <p>6. 延長項目2的廢止日期 Extended the banned date of item 2</p> <p>7. 修改項目10-2之限制含量 Revised the Threshold Limit of item 10-2</p> <p>8. 修改項目11-1的管控對象, Revised controlled target of item 11-1</p> <p>9. 修改項目12的內容, 且部份對象由2級升級為1級管理</p>	2011.06.01

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	<p>Revised the content of item 12 and some controlled target have been moved up to Level 1 from Level 2</p> <p>10. 修改項目15, Revised item 15</p> <p>11. 修改項目16之限制含量</p> <p>Revised the Threshold Limit of item 16</p> <p>12. 修改項目17-2, 及17-4的限制含量 Revised item 17-2 and Threshold Limit of 17-4</p> <p>13. 修改項目19之限制含量</p> <p>Revised the Threshold Limit of item 19</p> <p>14. 修改項目22之限制含量</p> <p>Revised the Threshold Limit of item 23</p> <p>15. 修改項目24, Revised item 24</p> <p>16. 修改項目25, Revised item 25</p> <p>17. 修改項目26, Revised item 26</p> <p>18. 修改項目27, Revised item 27</p> <p>19. 修改項目28之限制含量</p> <p>Revised the Threshold Limit of item 28</p> <p>20. 修改項目30-1之管理等級</p> <p>Revised the Level of item 30-1</p> <p>21. 修改項目32之限制含量</p> <p>Revised the Threshold Limit of item 33</p> <p>22. 修改項目33之限制含量</p> <p>Revised the Threshold Limit of item 34</p> <p>23. 修改項目36, Revised item 36</p> <p>24. 修改項目37, Revised item 37</p> <p>25. 修改項目38, Revised item 38</p> <p>26. 修改項目42, REACH SVHC請依照歐盟官網所列為準，表32僅供參考 Revised item 42, as to SVHC, please follow the EU's official website listed in the subject, Table 32 is just for reference</p> <p>27. 修改項目44之限制含量</p> <p>Revised the Threshold Limit of item 45</p> <p>28. 新增項目47~51, Added new items 47 to 51</p> <p>29. 修改5.4, 測試報告有效期限</p> <p>Revised 5.4, Valid period of test report</p> <p>30. 新增可接受實驗室於5.5</p> <p>Added new acceptable test labs in 5.5</p>	
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	<p>31. 修改表4 RoHS 豁免清單 Revised Table 4 RoHS Exemptions</p>	
G	<ol style="list-style-type: none"> 1. 修改項目R1的限值含量 Revised Threshold Limit of R1 2. 修改項目R2的限值含量，其新增部份豁免截止日，及2級項目升級為1級 Revised Threshold Limit of R2 and added expired date and reclassified for some sub-items 3. 追加部份3級物質的標準/限制含量：為了明確3級物質管理（進行有關物質和其用途使用狀況的把握）被要求的範圍，追加了3級物質的標準/限制含量 Addition of criteria/threshold limit to some Level 3 substances – As for substances classified as Level 3, specific criteria/threshold limit have been added to clarify the scope of required management (technical investigations and monitoring of substances and their applications). 4. 修改項目7-3鍍青銅的要求 Revised the requirement of item 7-3 5. 項目16升級為1級 Reclassified item 16 from Level 3 to Level 1 6. 修改項目17-1 Revised item 17-1 7. 延長項目17-2之禁用日期，並將應用在無鹵機種的項目升級為1級 Extended the banned date of item 17-2, and reclassified 8. 新增項目17-7 Added item 17-7 9. 項目25對象為塑料橡膠添加劑者，升級為1級，並新增表35 Reclassified additives of plastics of item 25 as Level 1 and added Table 35 10. 項目26對象為纖維、布料中的添加劑者，升級為1級，並新增表36 Reclassified additives of textiles of item 26 as Level 1 and added Table 36 11. 項目36之限值由30ppm→不可被檢測出來 Threshold Limit of item 36 has been set from 30ppm to Not Detectable 	2012.05.02

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	<p>12. 新增DIHP, DHNUP於項目38 Added DIHP, DHNUP in item 38</p> <p>13. 新增DMAC於項目39 Added DMAC in item 39</p> <p>14. 修改項目42, 並新增高關注物質之相關參考網址於8. 參考文獻 References Revised item 42 and added Ref. URL of SVHC in 8. 參考文獻 References</p> <p>15. 新增項目52及53 Added new item 52 and 53</p> <p>16. 刪除不適用建興產品的排外條款, 並新增7c-I, 7c-II Deleted RoHS Exemptions that are not applicable to LITE-ON IT's products and added 7c-I, 7c-II, 7c-IV</p> <p>17. 新增Liteon Opto Technology(Guang Zhou) LTD Chemistry Laboratory於5.5可接受之實驗室 Added Liteon Opto Technology(Guang Zhou) LTD Chemistry Laboratory into 5.5 acceptable test labs</p> <p>18. 更新8. 參考文獻 References Updated 8. 參考文獻 References</p>	
H	<p>1. 更新11-1, SCCP的CAS No. Updated the CAS No. of 11-1 (SCCP)</p> <p>2. 新增12-2, 二氯化鈷的CAS No. Added the CAS No. of 12-2 (Cobalt dichloride (CoCl2))</p> <p>3. 修改排外條款限用年限 6a, 6b, 6c, 7a, 7b, 7c-I, 7c-II, 7c-IV, 13a</p> <p>4. 適用範圍新增照明應用產品 Add LED application products into scope.</p> <p>5. 項目41升級為1級 Reclassified item 41 from Level 2 to Level 1.</p>	2014.05.02
I	<p>變更公司名為光寶科技股份有限公司 Lite-On IT been renamed Lite-On Technology Corp.</p>	2015.03.16
J	<p>1. 修改排外條款限用年限 Revised RoHS exemptions</p> <p>2. 修改管控物質含量值 Revised the Threshold Limit of substances</p> <p>3. 修改REACH SVHC項目 Revised the REACH SVHC items</p>	2015.08.11

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1. 目的 Purpose:

本標準是：通過明確闡明光碟機、家用多媒體產品、固態硬碟及照明應用產品的零件和組件等中含有的管控物質之(1)禁止使用物質、(2)計劃全廢物質、(3)排外物質，以及(4)宣告物質，以實現下列目標：

- 1) 防止這些物質混入上述光碟產品中
- 2) 遵守相關法令及客戶要求
- 3) 保護地球環境，以及
- 4) 減輕對生態系統的影響

With regard to the "Controlled Substances" contained in the parts and devices employed in LITE-ON ODD, Home-used multimedia products, Solid State Drive (SSD) and LED application products, this Standard clarifies (1) banned substances, (2) substances to be phased out, (3) exempted substances (4) reportable substances and their uses, in order to realize the following aims and objectives:

- 1) To prevent the Controlled Substances from being used for above-mentioned LITE-ON products;
- 2) To comply with related laws, regulations and customers requirements;
- 3) To contribute to the preservation of the global environment; and
- 4) To reduce the influence of the above substances upon the ecosystem.

2. 適用範圍 Scope:

2.1 產品適用範圍 Scope applicable to products

- 1) 由光寶自行設計、製造、銷售或配銷之光碟機、家用多媒體產品、固態硬碟及照明應用產品 The ODD, Home-used multimedia products, SSD and LED application products that are designed, manufactured, sold, or distributed by LOIT.
- 2) 由光寶委託第三者設計、製造之光碟機、家用多媒體產品、固態硬碟及照明應用產品 The LOIT ODD, Home-used multimedia products, SSD and LED application products whose design and/or manufacture are outsourced to third parties
- 3) 第三者委託光寶進行設計、製造之光碟機、家用多媒體產品、固態硬碟及照明應用產品 The LOIT ODD, Home-used multimedia products, SSD and LED application products

2.2 零件和材料的適用範圍 Scope applicable to parts and materials

本標準適用於：光寶以及由光寶委託設計、製造的產品所包含的零件、材料及其他物品。這些對象均必須符合本標準的規定。

Targets are the parts, materials, and other articles that are procured by Lite-On, or by third parties to which Lite-On outsources the design and manufacture of its electronics products. The targets need to meet the criteria specified in this Standard.

所適用的零件和材料為 Target parts and materials:

- 半成品(功能單元、模組、板組件(board assemblies)等的組裝零件等)
- Semi-finished products (e.g. modules, functional units, board assemblies, and other assembly parts)
- 零件(電子零件、機械零件、半導體元件、印刷電路板、記錄媒體、包裝零件、螺絲和材料)
- Parts (electrical parts, mechanical parts, semiconductor devices, PWBs, recording media, packaging components, screws and materials)
- 附件(配合機器使用的附屬品，例如，遙控器、AC 變壓器、電池等)
- Accessories (remote controller, AC adaptors, batteries and others to control the products)
- 產品採用的輔助材料(膠帶(adhesive tape)、焊接材料、黏著劑等)之組成材料等
- Materials constituting subsidiary parts and materials (e.g. adhesives, adhesive tapes, soldering materials, etc.) used for products
- 印刷品(操作說明書、保證書、產品和零件相關的補充信息等)
- Printed materials (e.g. instruction manuals, warranty cards, additional product/parts information)
- 零件交貨廠商為了運送或保護貨物使用的包裝零件和材料(請參考3.3)
- Packaging components and materials that parts suppliers use for delivery and protection (See Section 3.3)

3. 定義 Definition

本標準對術語做如下定義 In this standard, terms are defined as follow:

3.1 管控物質 Controlled Substances

"管控物質"為在模組、零件、副資材與材料的組成中，經光寶及其客戶判斷含有對人類及地球環境存在顯著影響之物質

"Controlled substances" are the substances contained in modules, parts, sub-materials, and materials which have significant environmental-impact on both humans and the globe environment according to LOIT and its customers judgment.

3.2 管理等級 Management Levels

為管理"管控物質"，按照表1 之等級及排外項目管理。

To manage the "Controlled Substances", the following Levels and Exemption listed in Table 1 are used:

表1 管理等級 Table 1: Management Levels

(a) 1 級 Level 1 (禁止使用物質 Banned substances)
此級之物質及/或其用途，必須立即禁止使用於零件和材料中。 The substances and/or their purposes classified at this level are those that are banned for the use in parts and materials.
(b) 2 級 Level 2 (計劃全廢物質 Substances to be phased out)
此級之物質及/或其用途，規定一定時期後予以禁止。到達或超過表中規定之日期後，此級物質轉為"1 級"。 The substances and/or their purposes classified at this level are those for which a period for phase-out is individually set. On or after the date set in each table, the substances On or after the date set in each table, the substances in the respective table will be classified at Level 1.
(c) 3 級 Level 3 (計劃全廢物質 Substances to be phased out)
目前雖然沒有規定全廢的目標日期，但是指定了希望朝向完全廢除使用的零件和材料中所含有的物質及其用途。當判斷可以引進代替的零件、開發新材料和代替技術時，即可由3 級提升至2 級，同時逐步實現全廢的目標。 No effective date of the ban on the delivery is currently set for the substances and their applications classified into this Level. The ones under Level 3 shall be reclassified into Level 2 for banning the use of them in phases, depending on the availability of alternative parts or materials that satisfy the intended uses.
(d) 排外項目 Exemptions
不在法令的規定範圍中，或者現階段沒有代替技術方案的物質和用途部位。 The substances and their applications classified as Exemption are those not regulated by or exempted from laws, or excepted from the "Controlled Substances" because of the unavailability of adequate alternative parts and materials on the market that satisfies the intended application.
(e) JIG (JIG: Join Industry Guide 聯合產業指南)
IPC-1752 所定義之等級；用以簡化蒐集、追蹤及揭露產品的物質組成內容資訊。當供應商的零件中含有此等級的管控物質時，必須提供此物質的相關資訊於"物質組成宣告"(MCD)。 The level is defined in IPC-1752, which is used to simplify the process of collecting, tracking and declaring the composition data of the product. If supplier's component contain the substances classified in this level, supplier shall provide related data in the "Material Composition Declaration" (MCD).
(f) R級 Level R (R: Reportable Substances, 宣告物質)
客戶所定義之宣告物質等級；當供應商的零件中含有R級物質，且超過其限值含量，必須於"物質組成宣告"中揭露 The level is defined as Reportable Substances level by customers. Substances classified in Level R shall be disclosed on the "Material Composition Declaration" (MCD) if supplier's component contain this level substances above the stated reportable threshold limit.

3.3 包裝零件和材料 Packaging components and materials

包裝零件和材料是指：生產者為了將產品(包括原材料到加工品)以「裝入」、「保護」、「掌握」、「運送」、「交付」等方式送到使用者或消費者手中，使用各類材料及零件製成的產品。詳細管控對象，請參考表31。

Packaging components and materials are defined as products made from any materials and components of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods from the producer to the user or consumer. For detailed controlled objects, please refer to Table 31.

3.4 「電池」、「電池組」以及「鈕扣電池」 "Battery," "Battery pack," and "Button cell"

「電池」是指：通過直接轉換化學能源，使其產生電氣能源。它是由單一或數個一次電池(即原電池primary battery：不能再充電)，或是單一或數個二次電池(即蓄電池secondary battery：可再充電)所組成的。"Battery" means any source of electrical energy generated by direct conversion of chemical energy and consisting of one or more primary battery cells (non-rechargeable) or consisting of one or more secondary battery cells (rechargeable).

「電池組」是指：由數個的電池相互連接，且終端用戶(end-user)無企圖拆解，即以全套裝置(complete unit)的形式安裝於外殼(outer casing)中的電池套組。"Battery Pack" means any set of batteries that are connected together and/or encapsulated within another casing so as to form a complete unit that the end-user is not intended to split up or open.

「鈕扣電池」是指：其直徑比高度長，外形小並且為圓形的攜帶型「電池」。因特別的目的用於助聽器、腕表、小型可攜帶式機器產品、備用電源等中的電池。"Button Cell" means any small round portable battery whose diameter is greater than its height and which is used for special purposes such as hearing aids, watches, small portable equipment and back-up power.

「電池」、「電池組」及「鈕扣電池」中的電池，均應按照表2的*R8記載的規定。Battery, Battery packs and Button Cell shall be compliant with the rules specified in Table 2, Section *R8, because they are identified as "Battery."

另外，構成「電池組」的元件中，對電池以外的其他零組件，應依照本技術標準表2的*R1~*R7項的規定。

For "Battery packs", parts which constitute except the cell follow the standards specified in Table 2, Section *R1~*R7 also.

4. 管控物質的管理等級 Management Levels for "Controlled Substances"

4.1 管控物質 Controlled substances

本標準中作為對象的“管控物質”，如表2 所示
 Table 2 below lists the "Controlled Substances" defined in this Standard.

表2 管控物質濃度限值表 Table 2: Threshold Concentration Limits for Controlled Substance					
項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含, 但不限於) Controlled Targets (includ but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
*R1	鎘(Cd)以及鎘化合物 Cadmium (Cd) and Cadmium compounds	1	● 塑料 (包括橡膠) Plastics (including synthetic rubbers) ● 塗料 paints ● 油墨 inks	● 5 ppm	● 須交付ICP測試報告, 請參考第5節 ICP test reports are required, please refer to section 5 ● 排外條款, 請參考表4 For exemptions, refer to Table 4 ● CAS號碼, 請參考表6 For CAS No., please refer to Table 6
		1	● 焊料 Solder	● 20 ppm	
		1	● 上述以外的所有用途 (關於包裝零件和材料, 參照*R7。關於電池, 參照*R8。) All applications other than the above (See *R7 Additional rules for packaging components and materials. See *R8 Additional rules for batteries.)	● 50 ppm	
*R2	鉛(Pb)以及鉛化合物 Lead (Pb) and Lead compounds	1	● 塑料 (包括橡膠) Plastics (including synthetic rubbers) ● 電線、電纜及電線類的包覆材料含有塑料 (包含橡膠) Insulation of wires, cables and cords are defined as plastics (including rubbers)	● 100 ppm	● 須交付ICP測試報告, 請參考第5節 ICP test reports are required, please refer to section 5 ● 排外條款, 請參考表4 For exemptions, refer to Table 4 ● CAS號碼, 請參考表6 For CAS No., please refer to Table 6
		1	● 塗料 paints ● 油墨 inks	● 90 ppm	
		1	● 焊料 Solder	● 800 ppm	
		1	● 鍍層 (無電解鍍線、無電解鍍金等的包括無電解鍍皮膜) ● Platings (including platings by nonelectrolytic plating such as nickel plating and gold plating)	● 800 ppm	
		1	● 鋼材 Steels, 豁免截止日 2020/7/1 (Expires on 1 July 2020)	● 3500 ppm	
		1	● 鋁合金 Aluminum alloys, 豁免截止日 2020/7/1 (Expires on 1 July 2020)	● 4000 ppm	
		1	● 銅合金 (包含黃銅、磷青銅), 豁免截止日 2020/7/1 (Expires on 1 July 2020) Copper alloys (including brass and phosphor bronze)	● 40000 ppm	
		1	● 螢光管的玻璃 Glass of fluorescent tubes	● 800 ppm	
		1	● 上述以及2、3 級以外的所有用途 (關於包裝零件-材料, 也請參照*R7。關於電池, 也請參照*R8。) All applications other than the above, Level 2 and Level 3 (See *R7 Additional rules for packaging components and materials. See *R8 Additional rules for batteries.)	● 800 ppm	
		1	● 低於125V AC 或250V DC 額定電壓的電容器上的介電陶瓷 Dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	● 800 ppm	
3	● 在無電解鍍線、無電解鍍金等的無電解鍍皮膜 Electroless plating films such as electroless nickel plating and electroless gold plating	● 電鍍皮膜中, 鉛含有1000 ppm (0.1 wt%)以下 Up to 1000 ppm (or 0.1 wt%) of the lead in plating	● NA		
*R3	汞(Hg)以及汞化合物 Mercury (Hg) and Mercury compounds	1	● 冷陰極熒光燈管(CCFL)及外置電極熒光燈(EEFL): 長度在500mm 以下 Mercury in cold cathode fluorescent lamps (CCFL) and external electrode fluorescent lamps (EEFL): Not over 500 mm in length	● 禁止每根中汞含有量為3.5mg 以上的刻意添加 ● Banned 3.5 mg or more of mercury per lamp intentionally added	● 須交付ICP測試報告, 請參考第5節 ICP test reports are required, please refer to section 5 ● 排外條款, 請參考表4 For exemptions, refer to Table 4 ● CAS號碼, 請參考表7 For CAS No., please refer to Table 7
		1	● 上述以外的所有用途 (有關包裝零件-材料, 也請參照*R7。有關電池, 也請參照*R8。)	● 禁止刻意添加 Intentionally added is banned ● 非刻意添加時: 800 ppm Non-intentionally added: 800 ppm	
*R4	六價鉻(Cr6+)化合物 Hexavalent chromium (Cr6+) compounds	1	● 金屬應用: 如電鍍、化學轉化處理等的表面處理(螺絲、鋼板等) Metallic applications such as surfaces of screws, steel sheets, etc. that are processed with plating or conversion coating	● 殘留在被處理部位: 不可被檢測出來 Residue in the processed surface: Not Detectable	● 須交付ICP測試報告, 請參考第5節 ICP test reports are required, please refer to section 5 ● 排外條款, 請參考表4 For exemptions, refer to Table 4 ● CAS號碼, 請參考表8 For CAS No., please refer to Table 8
		1	● 非金屬應用: 上述以外的所有用途 All applications other than the above (有關包裝零件和材料, 也請參照*R7。有關電池, 也請參照*R8。) Non-metallic applications (See *R7 Additional rules for packaging components and materials. See *R8 Additional rules for batteries.)	● 禁止刻意添加 Intentionally added is banned ● 非刻意添加時: 500 ppm Non-intentionally added: 500 ppm	
*R5	聚溴聯苯 (PBBs) Polybrominated diphenylethers (PBBs)	1	● 各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics)	● 不可被檢測出來 Not Detectable	● 須交付ICP測試報告, 請參考第5節 ICP test reports are required, please refer to section 5 ● CAS號碼, 請參考表9 For CAS No., please refer to Table 9

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (includ but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
*R6	聚溴聯苯醚 (PBDEs) (包含十溴聯苯醚 [DecaBDE]) Polybrominated diphenylethers (PBDEs) (including decabromodiphenyl ether [DecaBDE])	1	<ul style="list-style-type: none"> ● 各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics) 	<ul style="list-style-type: none"> ● 不可被檢測出來 Not Detectable 	<ul style="list-style-type: none"> ● 須交付ICP測試報告, 請參考第5節 <u>ICP test reports are required, please refer to section 5</u> ● CAS號碼, 請參考表10 <u>For CAS No. please refer to Table 10</u>

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
*R7	包裝零件和材料中所含的管控物質 Cd, Pb, Hg and Cr6 contained in packaging components and materials	1	<ul style="list-style-type: none"> ● 表31所列之包裝材料與對象 The targets of packaging materials listed in Table 31 ● 塑膠(包含橡膠)、塗料與油墨中的鎘和鉛限制含量,仍須符合項目R1及R2的規定 Threshold limit of cadmium and lead contained in plastics (including rubbers), paints, and inks still need to meet the requirement in Items R1 & R2 ● 使用在木質包材的砷化合物 Arsenic compounds, applied for wood packaging 	<ul style="list-style-type: none"> ● 鎘鉛汞六價鉻總合: 80 ppm Cd+Pb+Hg+Cr6+: 80 ppm ● 砷化合物: 10 ppm Arsenic compounds: 10 ppm ● 包材中的塑膠(包含橡膠)、塗料、油墨的鎘含量: 5 ppm Plastics (including synthetic rubbers), Paints, and inks contain Cd: 5ppm ● 包材中的塑膠(包含橡膠)、塗料、油墨的鉛含量: 100 ppm Plastics (including synthetic rubbers), Paints, and inks contain Pb: 100ppm 	<ul style="list-style-type: none"> ● 須交付ICP測試報告,請參考第5節 ICP test reports are required, please refer to section 5 ● 細節及排外條款,請參考表31 For details and Exemptions, please refer to Table 31
*R8-1	電池中所含的鎘、鉛及汞 Cd, Pb and Hg contained in battery	1 鎘(Cd)	<ul style="list-style-type: none"> ● 禁止使用鎘/鎘電池 NiCd batteries are banned ● 電池與電池組的鎘含量於電池總重量不得超過10 ppm,且嵌入式電池(如已被鉸接或膠黏)鎘含量不得超過重量的5ppm。Cadmium content in proportion to the total weight of batteries and battery pack does not exceed 10 ppm, and must not exceed 0.0005% (5 ppm) by weight for built-in batteries (such as those that are soldered or glued) ● 碳鋅電池、鹼性電池以及鎳氫電池(Ni-MH)的蓄電池中,鎘含量於電池總重不得超過10ppm Zinc carbon batteries, alkaline batteries, and a nickel hydrogen (nickel-MH) rechargeable batteries whose cadmium content, in proportion to their weight, does not exceed 10ppm 		
		1 鉛(Pb)	<ul style="list-style-type: none"> ● 組裝設置在機器中的「電池」及「電池組」中,鉛含量於電池總重不得超過 1000ppm。"Batteries" or "Battery packs" built into an instrument fixed, whose lead content in any of their cells does not exceed 1000ppm ● 可充電電池(小型密封鉛酸電池除外)的鉛含量於電池總重量不得超過4000 ppm Lead content in proportion to the total weight of rechargeable type batteries (excluding small-size sealed acid-ones) does not exceed 4000 ppm ● 不可充電電池的鉛含量於電池總重量不得超過2000ppm Lead content in proportion to the total weight of non-rechargeable type batteries does not exceed 2000ppm ● 碳鋅電池及鹼性電池,鉛含量對於電池的總重量不得超過1000ppm。Zinc carbon batteries and alkaline batteries whose lead content, in proportion to their weight does not exceed 1000ppm. 		
		1 汞(Hg)	<ul style="list-style-type: none"> ● 鈕扣電池的汞含量於電池總重量不得超過20000 ppm Mercury content in proportion to the total weight of coin cell batteries and battery pack does not exceed 20000 ppm ● 電池與電池組(鈕扣電池除外)的汞含量於電池總重量不得超過1 ppm Mercury content in proportion to the total weight of batteries and battery pack (excluding coin cell ones) does not exceed 1ppm ● 於產品與零件中不能使用氧化汞電池 Products, parts and components must not contain mercuric oxide batteries ● 碳鋅電池和鹼性電池,汞含量對於電池的總重量不得超過1ppm。Zinc carbon batteries and alkaline batteries whose mercury content, in proportion to their weight, does not exceed 1ppm 		
*R8-2	電池的額外要求 Additional requirements for battery	1	<ul style="list-style-type: none"> ● 不可充電的鹼性及碳鋅電池必須密封的 Nonrechargeable alkaline and carbon-zinc batteries must be hermetically-sealed. ● 所有電池必須符合所有可適用的設計、標示、測試或其他指定的必要要求,以避免被分級為運送中的危險物品,其定義如下方的文件,當運送時被安裝於或包含於設備中: - 美國, "危害物質規章", 美國交通部(DOT)聯邦法規第49章 - 國際民用航空組織(ICAO), "危險物品航空安全運送技術指南" - 國際航空運輸協會(IATA), "危險貨物規章" <p>All batteries must meet all applicable design, manufacture, marking, testing, and other battery specific requirements necessary to avoid classification as a dangerous good for purposes of transport for all modes of transportation, as defined in the following documents when shipped installed in, or with equipment:</p> <ul style="list-style-type: none"> - United States, "Hazardous Materials Regulations," Title 49, Code of Federal Regulations, US Department of Transportation (DOT) - International Civil Aviation Organization (ICAO), "Technical Instructions for the Safe Transport of Dangerous Goods by Air" - International Air Transport Association (IATA), "Dangerous Goods Regulations" 		
RoHS 2	RoHS 2 新物質限制 RoHS 2 New Material Restrictions - 增塑劑 Phthalates: DEHP, BBP, DBP	1	<ul style="list-style-type: none"> ● 鄰苯二甲酸二(2-乙基己基)酯 (DEHP)、鄰苯二甲酸丁酯苯甲酯 (BBP)、鄰苯二甲酸二丁酯 (DBP) 禁止使用在產品中任何均質材質上。 The use of Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate, (BBP), and Dibutyl phthalate (DBP) is prohibited in any homogeneous material of product. 	● BBP+DBP+DEHP<1000 ppm	<ul style="list-style-type: none"> ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● XBOX零件: 有使用增塑劑的原材料, 需提供測試報告 XBOX parts: test report is required for the raw material that uses phthalates ● CAS No: DEHP: 117-81-7, BBP: 85-68-7, DBP: 84-74-2
	RoHS 2 新物質限制 RoHS 2 New Material Restrictions - 溴化阻燃劑 BFR: HBCDD	1	<ul style="list-style-type: none"> ● 六溴環十二烷 (HBCDD) 禁止使用在產品中任何均質材質上。 The use of Hexabromocyclododecane (HBCDD) is prohibited in any homogeneous material of product. 	● 1000 ppm	<ul style="list-style-type: none"> ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS No: 25637-99-4
RoHS	RoHS 承諾 RoHS Compliance	1	<ul style="list-style-type: none"> ● 所有零件及原材質在電子電機產品中, 必須滿足歐盟指令2011/65/EU - 電子電機設備危害物質禁用指令 ("RoHS"指令), 包含隨著時間修訂及類似的法令已被其他國家, 州, 或地區所採用。參考上述R1-R8, RoHS2及供應商承認需求。 All parts, components, and materials used in electrical and electronic products must comply with the European Union's Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, as amended from time to time, ("RoHS" Directive) and similar regulations that may be adopted by other countries, States or regions. Refer to the above sections for items R1-R8, RoHS 2, and supplier approval requirements. 		<ul style="list-style-type: none"> ● 由簽署附件7.4來保證 Guarantee by signing Attachment 7.4

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
1	烷基酚 Alkylphenols	1	●所有產品與零組件 All products and parts	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS No: EDF-149
2	錫(Sb)及錫化合物 Antimony and Antimony compounds	1 JIG R	●各式用途,如顏料、塗漆、催化劑、無鉛錫膏、穩定劑、n型摻雜劑、阻燃劑、半導體、鍍層 All purposes (e.g. pigment,paint,catalyst,lead free solder,stabilizer,n-type dopant,flame retardant,semiconductor,plating.)	●700 ppm	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2 ●請制定削減計劃,以滿足禁用時程 Establish a depleting plan to meet banning schedule ●CAS號碼,請參考表11 For CAS No, please refer to Table 11
3	砷(As)以及砷化合物 Arsenic(As) and Arsenic compounds	1 JIG R	●除等級3以外的各式用途,均應在2010年8月1日禁用 All purposes except Level 3.	●不可被檢測出來 Not Detectable	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2 ●CAS號碼,請參考表12 For CAS No, please refer to Table 12
		3 JIG R	●照相機濾光片及鏡片、半導體、使用在PCB銅箔、鉛蓄電池、黃銅、水晶或含鉛玻璃、防污及木材保護媒介、防腐處理木材 camera filters and camera lenses; semiconductors; copper foil for printed circuit boards; lead storage batteries; brass, crystal or lead glass; antifouling and wood protection agents; and treated timber.	●100 ppm	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2 ●CAS號碼,請參考表12 For CAS No, please refer to Table 12
4	石棉及其化合物 Asbestos and its compounds	1	●各式用途,如絕緣體及填料等。 All purposes (e.g. those for insulators and fillers).	●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼,請參考表13 For CAS No, please refer to Table 13
5	鋇(Ba) Barium	1	●微軟XBOX外接配件 External Applications in certain Microsoft XBOX Accessories	●1000 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
6	苯或氯苯 Benzene or Chlorobenzene	1	●在材質中的殘留 As residue in materials	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
7-1	鈹(Be)及鈹化合物 Beryllium and Beryllium compounds	1 JIG R	●所有用途(如陶瓷、金屬合金、半導體、催化劑、急速硬化合金、焊劑) All purposes (e.g. ceramics, metal alloy, semiconductor, catalyst, precipitation hardening alloy, solder)	●Level 1: 1000 ppm ●JIG: 200 ppm	●若含量超過200ppm,須填寫附件7.2(但不得超過1000ppm) If material contains this more than 200ppm, needs to fill Attachment 7.2 (but more than 1000ppm is not allowed) ●CAS號碼,請參考表14 CAS No, please refer to Table 14
7-2	氧化鈹(BeO) Beryllium oxide	1	●所有用途 All uses	●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
7-3	鈹青銅 Beryllium copper	3	●所有用途(如含量不超過2%的鈹銅合金用作彈簧配件) All purposes (e.g. Inclusion not more than 2% in beryllium-copper alloys used as spring parts)	●禁止刻意添加 Intentionally added is banned	●None
8	鉍(Bi)及鉍化合物 Bismuth and Bismuth compounds	3 JIG R	●各式用途,如無鉛錫膏、焊錫 All purposes (e.g. lead free solder, solder)	●1000 ppm	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2 ●CAS號碼,請參考表15 For CAS No, please refer to Table 15
9	雙酚A,即二酚基丙烷 Bisphenol-A	1 R	●各式用途,如環氧樹脂(epoxy resin)、聚碳酸酯樹脂(PC)及其他塑膠中 All purposes (excluding epoxy resin, polycarbonate and other plastics)	●50 ppm	●None
10-1	含氯碳氫化合物 Chlorinated Hydrocarbons	1	●使用於材料或產品中,作為阻燃劑 As flame retardants using in materials or products.	●1000 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼,請參考
10-2	含氯碳氫化合物:六氯乙烷 Chlorinated Hydrocarbons: Hexachloroethane	1	●使用於材料或產品中,作為阻燃劑 As flame retardants using in materials or products. ●禁止於製造及非鐵金屬的製程中使用 Prohibited in manufacturing or processing of nonferrous metals	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS No: 67-72-1

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
11-1	氯化烷烴(氯化石蠟) 1. C10-13的短鏈型氯化烷烴(SCCP): Short-chain chlorinated paraffins (SCCP): with C10-13 carbon chain length	1 R	<ul style="list-style-type: none"> ●所有的用途, 如用於產品(含配件)的外殼、印刷電路板等用途 Short-chain All uses like the external cases and PCBs of products (including accessories) ●塗料、塗層、密封劑、橡膠和油類 Paints, coatings, sealants, rubbers and oils 	●不可被檢測出來 Not Detectable	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●SCCP CAS No: 71011-12-6, 8029-39-8, 85535-84-8, 85536-22-7, 63449-39-8, 85681-73-8, 108171-26-2
11-2	2. C14-17的中鏈型氯化烷烴(MCCP) Medium-chain chlorinated paraffins (MCCP): with C14-17 carbon chain length	R	<ul style="list-style-type: none"> ●聚酯(柔軟劑/阻燃劑), 絕緣和密封劑, 膠水, 油漆, 漆, 表面處理(主要是溶劑型), 聚氯乙烯, 潤滑油/金屬製造的潤滑油, 皮革保護, 橡膠 Polyester (softener/fire retardant), insulation and sealants, glue, paint, lacquer, surface treatment (primarily solvent-based), PVC, lubricants/lubrication oils for metalworking, Leather preservation, rubber 	●1000 ppm	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
11-3	氯化烷烴(氯化石蠟)(CP) (包含上述兩項) Chlorinated paraffins (CP) (Including two items above)	3	<ul style="list-style-type: none"> ●1級以外之各式用途, 如聚合物和彈性體用增塑劑和阻燃劑。 All purposes except those classified as "Level 1" (e.g. those for the flame retardants and plasticizers contained in polymers. 	●NA	●NA
12-1	鈷及其化合物 Cobalt and its compounds	1	<ul style="list-style-type: none"> ●用在直接與皮膚長期接觸的零件中 	●不可被檢測出來 Not Detectable	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
12-2	二氧化鈷 (CoCl2) Cobalt dichloride (CoCl2)	1	<ul style="list-style-type: none"> ●用於乾燥劑(矽膠等)中的濕度指示劑 Moisture indicator used for a desiccant agent (e.g. silica gel) ●濕度指示劑(濕度顯示卡) (注)所指的濕度指示劑, 是將二氧化鈷浸漬到紙等裡面的吸濕類型 Any other application, e.g. Humidity indicator card which is impregnated with cobalt dichloride 	<ul style="list-style-type: none"> ●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable 	<ul style="list-style-type: none"> ●CAS No: 7646-79-9, 7791-13-1, 14216-74-1 ●由簽署附件7.1來保證
13	戴奧辛 Dioxins 溴系戴奧辛/呋喃 Brominated dioxins/furans, 氯系戴奧辛/呋喃 Chlorinated dioxins/furans 多氯聯苯戴奧辛 (PCDDs) Polychlorinated dibenzodioxins 多氯聯苯呋喃 (PCDFs) Polychlorinated dibenzofurans	1	<ul style="list-style-type: none"> ●各式用途 All Applications 	●不可被檢測出來 Not Detectable	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●多氯聯苯戴奧辛(PCDDs) Polychlorinated dibenzodioxins CAS No: 1746-01-6 多氯聯苯呋喃(PCDFs) Polychlorinated dibenzofurans CAS No: 136677-10-6

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14	發泡聚苯乙烯 (EPS) EPS (Expanded Polystyrene)	1	●往南韓的所有包裝材料。 All packing materials sold to South Korea.	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
		3	●1級以外之各式用途。 All purposes except those classified as "Level 1".	●NA	●None
15	甲醛 Formaldehyde	1	●產品中使用的纖維板、刨花板, 以及使用膠合板的木製品(例如, 揚聲器、機架等) The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks)	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●Ref. URL: Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products
16	氣味物質(二甲苯麝香及酮麝香) Fragrance substance (Musk xylene and Musk ketone)	1	●各式用途, 如香精。 All purposes (e.g. essence).	●不可被檢測出來 Not Detectable	●None
*17-1	鹵素(無鹵機種之氯[Cl]及溴[Br]) Halogen (Chlorine [Cl] and Bromine [Br], for Halogen Free product)	1	●各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics) ●組成無鹵產品的零件、原材料(金屬、陶瓷除外), 須滿足item 17-1~17-6的要求, 詳細請參閱附件7.3 - 光寶無鹵標準 Parts, components and raw materials (except metal and ceramic) that are incorporated into halogen free product, shall meet the requirement of item 17-1 to 17-6, please refer to Attachment 7.3 "LITE-ON Halogen Free Specification" for details	●Cl: 900 ppm ●Br: 900 ppm ●Cl+Br: 1500 ppm	●須交付測試報告, 請參考附件7.3 Test reports are required, please refer to Attachment 7.3 ●並需簽署附件7.1來保證 Besides, needs to guarantee by signing Attachment 7.1
*17-2	聚氯乙烯(PVC)以及聚氯乙烯混合物 Polyvinyl chloride (PVC) and PVC blends	1	●非接觸IC卡(FeliCa)用基材 Substrates for FeliCa contactless IC cards ●捆綁附件、連接電源線的扎線帶 Cable ties used for accessories and connecting cords ●輸出至光寶客戶端的包裝材料(表31) Packaging materials that are shipped to LOIT's End-Customers (Table 31) ●熱收縮管 Heat shrink tubes ●扁型軟電線(FFC) Flexible flat cables (FFC) ●用於木工產品外部之墊材與薄板, 如木箱、木製揚聲器之薄板 Sheets and laminates used for the exterior of wooden products (e.g. laminates for wooden cabinets and wooden speakers) ●外觀塑膠件(消費者於產品日常操作中能目視到的零件) the external case plastic parts of products (parts visible to the customer in normal product operation) ●絕緣板、裝飾板、標籤、片材、層壓板 Insulating plates, decorative panels, labels, sheets, and laminates ●安裝車用機器的吸盤 Suction cups for mounting in-vehicle products	●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS No: 9002-86-2
		1 R	●無鹵產品的相關應用, 請參考光寶無鹵標準的規定配合 All other purposes for Halogen Free product, please refer to LITE-ON Halogen Free Standard and take necessary action	●請參考光寶無鹵標準 Please refer to LITE-ON Halogen Free Standard	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●請參考附件7.3 Please refer to Attachment 7.3
		2 (2014.12.31)	●電源供應線材, 包含插頭、連接器或電線材接頭。(出口至歐洲之電源供應線材不在此限) Power supply cords, including plugs, connectors, or cord bushes (except those for import into EU countries). ●用於可攜式設備之連接線材, 如耳機、麥克風、耳帶式含麥克風耳機之連接線材等。 Connection wires those for wearable equipment (e.g. wire for ear phones, head phones, ear microphones). ●有使用到電線材(如連接器中的線材), 以及內部佈線用之電線材(如馬達接腳)的零組件。 Parts consisting of wire (e.g. connectors with wires) and wires used for internal wiring (e.g. motor leads). ●於設備、絕緣管、絕緣板、裝飾板、標籤、輸送帶、支架、護蓋、導管等內外部使用的保護與絕緣用塗層。 Coating for insulation and protection used for the inside and outside of device, insulated tubes, insulated boards, decorated panels, labels, carrying belts, holders, covers, ducts, etc. ●用於如 USB、iLink、RCA、交流式變壓器之副引線、多芯式電纜線、揚聲器線材等之連接線材。 Connection wires used for secondary leads, multi cables, and speaker wires, such as USB, iLink, RAC, AC adaptors. ●設備、半導體及其他零件所用的包裝零件材料(托盤、料條(裝運管)、制動機、帶盤、壓紋承載帶等) Packaging components or materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes)	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS No: 9002-86-2 ●請制定削減計劃, 以滿足禁用時程 Establish a depleting plan to meet banning schedule
		排外項目 Exemptions	●只有部份產品/零件在客戶接受的情況下, 可使用PVC Only for some specific products/parts can use PVC in the situation that customer accepts.	●NA	●NA
*17-3	無鹵額外物質限制: 三氧化二銻 (Sb2O3) Halogen-Free additional substances restrictions: Antimony Trioxide (Sb2O3)	2	●各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics)	●1000 ppm	●請參考附件7.3 Please refer to Attachment 7.3 ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1

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*17-4	無鹵額外物質限制: 紅磷 (Red-P) Halogen-Free additional substances restrictions: Red Phosphorus (Red-P)	2	● 各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics)	● 100 ppm	● 請參考附件7.3 Please refer to Attachment 7.3 ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
17-5-1	溴化耐燃劑 (BFRs, 除了 PBB, PBDE, HBCDD, 及 TBBPA之外) Brominated Flame Retardants (BFRs, excl. PBB, PBDE, HBCDD and TBBPA)	1	● 國際大廠(如Acer, Dell, HP, SONY,...)等ODD產品的外觀塑膠件(消費者於產品日常操作中能目視到的零件, 如Bazel和Tray盤) External case plastic parts (parts visible to the customer in normal product operation, e.g. Bazel and Tray) for global ODD brand (e.g. Acer, Dell, HP, SONY,..., etc)	● 900 ppm	● 請參考附件7.3 Please refer to Attachment 7.3 ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
17-5-2	溴化耐燃劑 (BFRs, 除了 PBB, PBDE, HBCDD, 及 TBBPA之外) Brominated Flame Retardants (BFRs, excl. PBB, PBDE, HBCDD and TBBPA)	JIG R	● 各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics)	● 1000 ppm	● 請參考附件7.3 Please refer to Attachment 7.3 ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
17-6	氯化耐燃劑 (CFRs) Chlorinated Flame Retardants	R	● 各式用途, 如塑膠中所含的阻燃劑等。 All purposes (e.g. flame retardants contained in plastics)	● 900 ppm	● 請參考附件7.3 Please refer to Attachment 7.3 ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
17-7	溴化/氯化耐燃劑 (BFRs/CFRs) Brominated/Chlorinated Flame Retardants (BFRs/CFRs)	1	● 無鹵機種零件; 及大於25公克的塑料零件 Restriction applies to plastic parts greater than 25 grams and parts used in Halogen Free or BFR/CFR-Free models	● 900 ppm	● 請參考附件7.3 Please refer to Attachment 7.3 ● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1

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18	鹵化芳香族物質 Halogenated aromatic substances	1	● 禁止使用在電容器及變壓器的材料中 Prohibited from use in capacitors and transformers in materials of the component	● mono-halogenated: 500 ppm ● poly-halogenated aromatic: 50 ppm	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表17 For CAS No. please refer to Table 17
19	鹵化二苯基甲烷 Halogenated diphenyl methanes	1	● 各式用途,如電容器、潤滑油、絕緣油、油浸變壓器等。 All purposes (e.g. ones for capacitors, lubricants, insulating oils, transformers containing oil). ● 產品及其製備 Products and products preparations	● 不可被檢測出來 Not Detectable	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表18 For CAS No. please refer to Table 18
20	六氯環己烷 (HCH) Hexachlorocyclohexane isomers (HCH)	1	● 所有產品與零組件 All products and parts	● 不得使用 Not use	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS No: 58-89-9, 608-73-1
21	鎂及鎂合金 Magnesium and Magnesium Alloys	3	● 所有用途 All uses	● 1000 ppm	● CAS No: 7439-95-4
22	鎳(Ni)以及鎳化合物 Nickel (Ni) and Nickel compounds	1	● 產品外露部位之最外層表面處理,使用含有金屬鎳或鎳合金物質作為電鍍、塗層等用途,容易被皮膚直接且長時間接觸者 Metallic nickel or nickel alloy in the plating or coating application of the outer and exposed areas of modules or parts, and easily to be in direct and prolonged skin contact	● 不可被檢測出來 Not Detectable	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表19 For CAS No. please refer to Table 19
		R	1級以外之各式用途,例如: All kinds of purposes except those classified in level 1, such as: ● 產品內部之外購模組及零組件。 Modules and parts inside the products ● 使用非管控物質作為產品外露部位之最外層表面處理等用途。 Use non-controlled substance for the handling of the surface on the exposed position of the product	● 1000 ppm	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
23	壬基酚與壬基酚聚氧乙烯醚及相關物質 Nonylphenol/ethoxylates (NP/NPEs) and related substances	1	● 所有產品與零組件 All products and parts	● 不可被檢測出來 Not Detectable	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
24	三取代基有機錫化合物 Trisubstituted Organic Tin compounds(三丁基錫 Tributyl Tin (TBT);三苯基錫 Triphenyl Tin (TPT),及三取代基有機錫化合物 Tributyl tin oxide (TBTO))	1 R	● 各式用途,如染料、油墨、防腐劑與防鏽劑等。 All purposes (e.g. those for paints, inks, preservatives, and fungicides). ● 輸出至先寶客戶端的包裝材料(表31) Packaging materials that are shipped to LOIT's End-Customers (Table 31)	● 禁止刻意添加 Intentionally added is banned ● 不可被檢測出來 Not Detectable	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表20 For CAS No. please refer to Table 20
25	二丁基錫化合物 (DBT) Dibutyltin (DBT) compounds	1	● 安定劑、氧化防止劑等的塑料添加劑、觸媒等的所有用途 All applications including additives in plastics such as stabilizers and antioxidants, Catalysts	● 禁止刻意添加 Intentionally added is banned ● 不可被檢測出來 Not Detectable	● 由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表35 For CAS No. please refer to Table 35
		1	● 一液型及二液型室溫硬化型 (RTV-1 及RTV-2) 密封劑 One-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) ● 一液型及二液型室溫硬化型 (RTV-1 及RTV-2) 接著劑 One-component and two-component room temperature vulcanisation adhesives (RTV-1 and RTV-2 adhesives) ● 塗料及塗抹劑的觸媒 Catalysts for paints or coating agents ● 面向用PVC塗抹的室外用途屋外用織物、纖維的安定劑 Stabilizers in PVC used for coating of fabrics intended for outdoor applications ● 軟質PVC其本身,或者,硬質PVC和同時被成形按出的軟質PVC異型材中的添加劑 Additives of soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC	● 錫含量 Content of Tin: 1000 ppm	● 請制定削減計劃,以滿足禁用時程 Establish a depleting plan to meet banning schedule

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
		排外項目 Exemptions	<ul style="list-style-type: none"> ●金屬錫、錫合金、錫電鍍、錫無機化合物 Metal tin, tin alloys, tin plating and tin inorganic compounds ●零部件和設備中所用再利用的包裝零件和材料中的添加劑 Additives of reused packaging components and materials for parts and devices ●設備、半導體及其他零件所用的包裝零件和材料(托盤、料條(裝運管)、制動機、帶盤、壓紋承載帶等)中的添加劑 Additives of packaging components or materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes) 		● NA
26	二辛基錫化合物 (DOT) Diocetyl tin (DOT) compounds	1	●纖維、布料中的添加劑 Additives of textiles	●錫含量 Content of Tin: 1000 ppm	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼,請參考表36 For CAS No. please refer to Table 36
		排外項目 Exemptions	<ul style="list-style-type: none"> ●金屬錫、錫合金、錫電鍍、錫無機化合物 Metal tin, tin alloys, tin plating and tin inorganic compounds 		● NA
27-1	臭氣層危害物質(ODS)及其異構體: 第一類及第二類 氟氯碳化物(Class I & Class II CFCs)、海龍(Halon)、含氟氯烴(HCFCs)、含溴氯烴(HBFCs)及其異構體、全氟化碳(PFC)及四氯化碳等 Ozone depleting substances (ODS) and Isomers: Class I & Class II CFCs, Halon, HCFCs, HBFCs and their Isomers, PFC and Carbon Tetrachloride, etc.		<ul style="list-style-type: none"> ●用於制冷劑和隔熱材料等的產品中所有用途 Uses for refrigerant, insulation and other products 	<ul style="list-style-type: none"> ●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable 	
		1	●所有的用途	<ul style="list-style-type: none"> ●禁止使用ODS實施清洗加工、發泡加工等的處理 Treatments such as cleaning and foaming is banned 	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼,請參考表21-1 For CAS No. please refer to Table 21-1
27-2	氟化溫室氣體 Fluorinated Greenhouse Gases (HFC, PFC, SF6)	1	<ul style="list-style-type: none"> ●HFC, PFC, SF6 不得用於單分量型式,無法再裝的容器,或用在清潔電子零件於組裝或拆解製程 HFC, PFC, SF6 must not be used in one-component foams, in nonrefillable containers, or to clean electronic parts during assembly or disassembly ●HFC, PFC不得用於含有冷卻劑的非密閉直接蒸發系統 containing refrigerants. HFC, PFC must not be used in unconfined direct-evaporation systems ●HFC不得用於新穎的煙霧劑 HFC must not be used in novelty aerosols. 	<ul style="list-style-type: none"> ●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable 	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼,請參考表21-2 For CAS No. please refer to Table 21-2
28	五氯酚(PCP)及其鹽及酯 Pentachlorophenol (PCP) and its salts and esters	1	●各式用途,如木料防腐劑及殺蟲劑。 All purposes (e.g. preservative and pesticide).	●不可被檢測出來 Not Detectable	<ul style="list-style-type: none"> ●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS No: 87-86-5
29	高氯酸鹽 Perchlorates	1	●各式用途 All purposes	●0.006 ppm	●CAS No: 7791-03-9

項目號碼 Item #	管控物質 Controlled Substances	管理等級 Level	下列用途為管控對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控方式及其他相關訊息 Controlled manner and other related
30-1	全氟辛酸酸 (PFOA)及其鹽類與酯類 Perfluorooctyl acid(PFOA) and individual salts and esters of PFOA	1	●各式用途,如矽氧樹脂(Teflon)、紡織品及皮革。 All purposes (e.g. semiconductor materials, textiles, leathers).	● 10 ppm 紡織品及有塗層的材料: 1 µg/m ² (textiles and other coated materials: 1 µg/m ²)	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●排外條款,請參考表22
30-2	全氟辛酸硫磺酸(及其鹽)(PFOS) Perfluorooctane sulfonates (PFOS)	1	●各式用途,如半導體材料、紡織品及皮革等 All purposes (e.g. semiconductor materials, textiles, leathers) ●「排外條款外」以外的所有用途 All uses except those specified in Exemption	●不可被檢測出來 Not Detectable	For exemptions, refer to Table 22 CAS No: 1763-23-1
		排外項目 Exemptions	① 商業用的光學膠片 Photographic films for professional use ② 半導體制程工藝用的光阻劑或塗層材料 Resists for semiconductors ③ 電鍍絡抑制劑 Mist suppressants for nondecorative hard chromium (VI) plating and wetting agents for use in controlled electroplating systems ④ 濕潤劑 wetting agents for use in controlled electroplating systems	● NA	● NA
31	酚及酚化合物 Phenol and phenolic compounds	1	● 使用在玩具及孩童物品,及印製線路板之層壓板 Applied in toys and childcare articles and laminates of printed wiring boards	● 50 mg/l	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
32	多氯聯苯(PCBs) Polychlorinated biphenyls (PCBs) 多氯三聯苯(PCTs) Polychlorinated terphenyls (PCTs) 多氯化萘(PCNs) Polychlorinated naphthalenes (PCNs)	1	①各式用途,如電容器、潤滑油、絕緣油、油浸變壓器以及塑膠中所含之阻燃劑等。 All purposes (e.g. ones for capacitors, lubricants, insulating oils, transformers containing oil, and flame retardants contained in plastics). ②PCBs及PCTs禁止使用在製備中 PCBs and PCTs must not be used in preparations.	● 禁止刻意添加 Intentionally added is banned ● 不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表23及表24 For CAS No, please refer to Table 23 and 24
33	多環芳烴化合物 (PAHs) Polycyclic aromatic compounds (PAHs)	1	●各式用途,如軟塑膠(橡膠),黑色塑膠、表面塗料、油漆 All purposes (e.g. soft plastics (rubbers), black colored plastics, coatings and varnish) ●應用在電子安定器的封裝材料 Applied in applications, such as potting material for electronic ballast ●PAHs禁止使用在列於表25-2的外觀件表面 PAHs must not be used in the external surfaces of the products listed in Table 25-2.	● 禁止刻意添加 Intentionally added is banned ● 不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表25-1 For CAS No, please refer to Table 25-1 ●受管控的外觀件列表,請參考表25-2 For external part to be controlled, refer to Table 25-2
34	放射性物質 [鈾(U)、鈾(Pu)、釷(Rn)、鐳(Am)、釷(Th)、銻(Cs)、銻(Sr)及其他放射性物質] Radioactive substances [U, Pu, Rn, Am, Th, Cs, Sr and other radioactive	1	●各式用途,如電性感測零件、磷光劑等。 All purposes (e.g. instance electricity is detected the part, phosphorescence pharmaceutical etc.).	● 不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表26 For CAS No, please refer to Table 26
35	硒及硒化合物 Selenium and Selenium compounds	1	●微軟XBOX外接配件 External Applications in certain Microsoft XBOX Accessories	● 500 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
		3 JIG R	●除1級之外的各式用途,如半導體、顏料、催化劑、感光劑、氧化媒 All uses except those specified in Level 1 (e.g. semiconductor, pigment, catalyst, sensitizer, oxidizing agent)	● 1000 ppm	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2 ● CAS號碼,請參考表27 For CAS No, please refer to Table 27
36	特定偶氮化合物 Specific azo compounds (Azocolorants and Azodyes) 對象為: REACH法規(1907/2006/EC)-附件XVII中引用的試驗法進行分解,生成表28特定胺化合物的偶氮化合物,及特定胺化合物	1	●與人體持續接觸的纖維、布料、皮革材料中的添加劑。 Additives of textiles and leathers that prolonged contact with the human skin	● 不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS號碼,請參考表28 For CAS No, please refer to Table 28

項目號碼 Item #	管控制物質 Controlled Substances	管理等級 Level	下列用途為管控制對象(包含,但不限於) Controlled Targets (include but are not limited to)	標準/原(均質)材質限制含量 Criteria/Threshold Limit in Raw (Homogeneous) material (*ppm)	管控制方式及其他相關訊息 Controlled manner and other related
37	特定苯並三氣嗪對象為「2-(3',5'-二叔丁基-2'-羥基苯基)苯並三嗪(CAS No. 3846-71-7)」 Specific benzotriazole: 2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)benzotriazole (CAS No. 3846-71-7)	1	用於以下產品中作為紫外線防護劑、紫外線吸收劑的用途 Ultraviolet protectants and ultraviolet absorbers applied to ●裝飾性層壓板 decorative laminate, ●印相紙(照相紙) developing papers, ●成型塑料產品 molded plastic parts, ●眼鏡鏡片、鏡框 lenses and frames of eyeglasses	●禁止刻意添加 Intentionally added is banned ●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
38	特定鄰苯二甲酸鹽: DINP、DIDP、DNOP、DNHP、DMEP Specific phthalates: DINP, DIDP, DNOP, DNHP, DMEP	1 JIG R	●各式用途,如用於電纜絕緣、電源線絕緣,及其對應的插頭或連接器部位的聚氯乙烯(PVC)樹脂含有增塑劑、染料、油墨、黏著劑等用途的特定鄰苯二甲酸鹽時。 All purposes, (e.g. plasticizer in polyvinyl chloride resin used for cable coating, cord coating, plugs and connectors or other plastics, dye, ink, adhesive	●BBP+DBP+DEHP+DIBP+DINP+DIDP+DNOP+DEP+DMP+DHNUP+DIHP+DMEP+DIPP+DnHP+DPP<1000 ppm	●由填寫附件7.2來宣告 Declare by filling Attachment 7.2
	特定鄰苯二甲酸鹽: DIBP Specific phthalates: DIBP	1	●電纜和電線(包括插頭、接插件部)的可塑劑用途 Plasticizers used for cables and cords (including plugs and connectors)	●零件限制含量: 1000 ppm ●Part contain limit: 1000 ppm	●CAS號碼,請參考表29 For CAS No. please refer to Table 29
	特定鄰苯二甲酸鹽: DIHP, DHNUP, Specific phthalates: DIHP, DHNUP	3	●上述以外的所有用途 All uses other than the above	●零件限制含量: 1000 ppm ●Part contain limit: 1000 ppm	
39	界面活性劑 Surfactants (DTDMAC, DODMAC/DSDMAC and DHTDMAC, DMAC)	3	●各式用途,如柔軟劑 All purposes (e.g. softener)	●1000 ppm	●CAS號碼,請參考表30 For CAS No. please refer to Table 30
40	四溴丙二酚 (TBBP-A) Tetrabromobisphenol-A (TBBP-A) CAS No: 79-94-7	1 R	●產品的外觀塑膠件(消費者於產品日常操作中能目視到的零件) External case plastic parts of products (parts visible to the customer in normal product operation)	●900 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
		1	●使用在新開發產品的PCB(國際大廠要求,如三星,...等) PCB for newly developed products (global brand requirement, e.g. Samsung, etc.)	●900 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1
41	三氯沙,即三氯羥基二苯醚 Triclosan	1 R	●各式用途,如抗菌劑及殺蟲劑。 All purposes (e.g. antibacterial and pesticide).	●10 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1

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42	REACH 高關注物質 REACH SVHC (Substance of Very High Concern)	R	●高關注物質及其用途請參考表32。為遵守REACH 法規，供應商應按照光寶要求提供相關技術文件及數據 Referent to Table 32 the potential use of SVHC. To comply with REACH regulation, suppliers shall provide related technical documentation and data based on LOIT's request. ●高關注物質每年至少公告兩次。供應商應自行關注列於8. 參考文獻之高關注物質建議及預建議清單網址，並在其正式公告前完成相關調查。若有使用超過1000ppm時，須主動告知光寶 SVHC will be released two times as least per year. Suppliers shall take care of the SVHC Pre-proposed list and Proposed list on the URL in 8. 參考文獻 References of this spec by yourself and conduct related investigation before it is released officially. Any of use beyond 1000ppm shall report to LITE-ON	● 1000 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●高關注物質，請參考"8. 參考文獻 References"之歐盟化學總署ECHA之網址公告為準，表32僅供參考 For SVHC, please follow URL of ECHA in "8. 參考文獻 References". Table 32 is just for reference
43	磷酸三(2-氯乙基)磷酸 Tris(2-chloroethyl)phosphate	R	●阻燃劑 Flame retardant	● 1000 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS No: 115-96-8
44	富馬酸二甲酯 (DMF) Dimethylfumarate	1	●各式用途，如皮革、乾燥劑及防霉劑。 All purposes (e.g. leather, desiccant packs and fungicides).	●不可被檢測出來 Not Detectable	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS No: 624-49-7
45	二-(μ-氧)-正丁基錫錫基硼烷 Di-μ-oxo-di-n-butylstanniohydroxyborane 二丁基錫氫硼烷 (C8H19BO3Sn(DBB); dibutyltin hydrogen borate)	1	●不得使用於製備中 must not be used in preparations	● 100 ppm	●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ● CAS No: 75113-37-0
46	木、紙及其他植物材質產品 Wood, Paper and other Plant-based Products	1	●零件、材質及產品不得包含任何違法來源的木質或其他野生植物材質 Parts, components, materials, and products must not contain any wood material or wild plant material that was illegally sourced from its country of origin.	●不得違反美國雷斯法案 None illegal to the Lacey Act	●雷斯法案請參考去連結 For Lacey Act, refer to APHIS-2008-0119
47	磷酸三(2-羧乙基)膦 (2-羧乙基)膦 Tris (2-carboxyethyl) phosphine (TCEP)	2 (2014.07.01)	●用於塑料、樹脂、纖維、布料的難燃劑用途 Flame retardants used in plastics, resins, fabrics, and textiles	●零件限制含量: 1000 ppm ● Part contain limit: 1000 ppm	●請制定削減計劃，以滿足禁用時程 Establish a depleting plan to meet banning schedule
48	三氧化二砷、五氧化二砷 Diarsenic trioxide, Diarsenic pentoxide	2 (2014.07.01)	●用於塑料、樹脂、纖維、布料的難燃劑用途 Flame retardants used in plastics, resins, fabrics, and textiles	●零件限制含量: 1000 ppm ● Part contain limit: 1000 ppm	●請制定削減計劃，以滿足禁用時程 Establish a depleting plan to meet banning schedule ● CAS No. 1303-28-2, 1327-53-3
49	硼酸、特定硼酸鈉 Boric acid, specific sodium borates	3	●所有的用途 All uses	●零件限制含量: 1000 ppm ● Part contain limit: 1000 ppm	●請參考表33 Refer to Table 33
50	衝突礦物 Conflict Minerals		衝突礦物(金屬)，是指金 (Au)，鉭 (Ta)，鎢 (W)，鈷 (Co)，鈀 (Pd) 和錫 (Sn) 等金屬，來自於剛果民主共和國或其鄰近國家非政府軍事團體或非法軍事派別所控制衝突地區的礦區。當地軍事團體取得的非法採礦利潤是從公民中盜竊得來的，而且在剛果民主共和國東部造成侵犯人權及環境惡化。請配合光寶衝突礦物採購政策。 Conflict minerals (metals) are metals such as gold (Au), tantalum (Ta), tungsten (W), cobalt (Co), palladium (Pd) and tin (Sn) derived from minerals being sourced from mines in Democratic Republic of Congo (DRC) conflict areas or surrounding countries which are controlled by non-government military groups, or unlawful military factions. Illegal mining profits by local military groups in the eastern DRC are contributing to human rights abuses, environmental degradation, and theft from the country's citizens. Please cooperate with LITE-ON Sourcing Policy for Conflict Mineral.		●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●詳細內容參考附件7.5 For detailed, please refer to Attachment 7.5
51	稀土金屬 Rare earth element	R	●稀土金屬，或稱稀土元素，是元素周期表第III族副族元素鈾、釷和錒系元素共17種化學元素的合稱。鈾和釷因為經常與錒系元素在礦床中共生，且具有相似的化學性質，故被認為是稀土元素。 As defined by IUPAC, rare earth elements or rare earth metals are a set of seventeen chemical elements in the periodic table, specifically the fifteen lanthanoids plus scandium and yttrium.[2] Scandium and yttrium are considered rare earth elements since they tend to occur in the same ore deposits as the lanthanoids and exhibit similar chemical properties. ●若使用稀土金屬請告知光寶 Please inform LITE-ON if you use rare earth metals		●由簽署附件7.1來保證 Guarantee by signing Attachment 7.1 ●CAS號碼，請參考表23及表24 For CAS No, please refer to Table 23 and 24
52	4-(1,1,3,3-四甲基丁基)苯酚 4-tert-Octylphenol	3	●所有用途 All uses ●別名：對特辛基苯酚 Synonym: 4-tert-Octylphenol,	●零件限制含量: 1000 ppm ● Part contain limit: 1000 ppm	CAS No.: 140-66-9
53	二乙二氧二甲醚 Bis(2-methoxyethyl) ether	3	●所有用途 All uses	●零件限制含量: 1000 ppm ● Part contain limit: 1000 ppm	CAS No.: 111-96-6

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54	Benzenamine N-phenyl, reaction products with styrene and 2,4,4-trimethylpentene (BNST)	1	●所有用途 All uses	●不可被檢測出來 Not Detectable	CAS No.: 68921-45-9

備註 Remark:

- 項目R1~R8及RoHS 2為RoHS及其相關的管制項目; 17為無鹵相關規定, 請參考附件7.3。
Items R1 to R8 and RoHS 2 are RoHS and its relevant compliances; 17 is related requirement for Halogen-Free, please refer to Attachment 7.3.
- 實驗室所提供之報告, 若顯示該物質之測試結果為"N.D.", 表示該物質之濃度值未達到該實驗室之方法偵測極限或儀器偵測極限。
- 一般而言, 極限值應小於 5 ppm. 此"N.D."測試結果是可以被光寶允收的。N.D. (Not Detectable) 意謂 "Not Detected" 該物質。
- ppm (Part Per Million) 意謂 每百萬分之一。

5. 交付光實測試報告必要條件 Requirement for Test Report providing to Lite-On

5.1 所有零部件的測試部位，必須以"均質"材料(原材質)為基測試準。(體積在4mm³之下的電子零件除外)
All parts should be separated for inspecting by "homogenous" materials (Raw materials). (Exclusive of the electronic components with volume less than 4mm³)

5.2 金屬底材若有金屬電鍍(或化學皮膜)處理時，金屬與鍍層需分開提供測試報告。鍍層部分需提供六價鉻測試報告。
If metal parts with the metal plating (or chemical coating), test report of metal and metal plating (or chemical coating) should be separated to test. Metal plating (or chemical coating) must provide Cr⁶⁺ test reports.

5.3 塑膠底材若有金屬電鍍處理，塑膠底材與金屬電鍍需分開提供測試報告。鍍層部分需提供六價鉻測試報告。
If plastic parts with the metal plating, test report of plastic and metal plating should be separated to test.

5.4 測試報告有效期限 Validity period of test report:

5.4.1 零件承認階段: 以二年為有效期限(例如: 於2015/01/01, 可以接受2013/01/01之後的測試報告)
唯客戶有特殊需求, 則依客戶需求為準。

Parts approval stage: Test reports are valid for two years. For example, a test report created on 1/1/2013 is valid until 1/1/2015. If customers have special requirements, exceptions can be made to this policy.

5.4.2 零件承認階段後, 唯客戶有特殊需求, 則依客戶需求為準。

After parts approval stage, if customers have special requirements, exceptions can be made to this policy.

5.5 測試報告必須是由取得ISO 17025認證之獨立第三方實驗室或當地國家認證所發行。

Test reports must be from an independent third-party lab certified to ISO 17025 or local country.

目前可接受之實驗室 Currently, acceptable test labs are: SGS, TUV, Bureau Veritas (BV), Centre Testing, International(CTI), Underwriters Laboratories (UL), Intertek, Bureau Veritas (BVCPS), ALS and Electronics Testing Center (ETC), 虹彩(HCT) and Liteon Opto Technology(Guang Zhou) LTD Chemistry Laboratory.

5.6 不同顏色的均質材料, 應提供個別測試報告。

Materials in different colors shall provide separate test report.

5.7 烤漆(或油墨)與底材視為不同材料, 應分開測試。

Paint(or ink) and raw materials are treated as different material. Separate test report is required.

5.8 外觀件提供之測試報告, 需包含測試流程及測試樣品照片之彩色電子檔為佳; 若測試報告無法清楚辨識將不予接受。

For external parts, 3rd party test report provided to LITEON shall be including testing procedure and full-color photo of test-sample in soft copy(e.g. pdf file). It is not acceptable if test report can not be recognized clearly.

5.9 允許測試方法, 請參考3 Please refer to Table 3 for acceptable test methods.

表3 允許的ICP報告測試方法

Table 3 ICP Method Acceptability Matrix

RoHS 管制項目 RoHS items	允許測試方法 Acceptable test methods	分析儀器 Instrument	額外需求 Additional requirement
鉛 Lead	IEC 62321-5:2013 IEC 111 IEC method, section 11, 12 or 13	ICP-OES, ICP-MS, AAS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to contain the followings in report: 1. These samples were dissolved totally (樣品已完全溶解) by pre-conditioning method 2. Test flow chart (測試流程圖)
汞 Mercury	IEC 62321-4:2013 IEC 111 IEC method, section 10	CV-AAS, AFS, ICP-OES, ICP-MS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖)
鎘 Cadmium	IEC 62321-5:2013 IEC 111 IEC method, section 11, 12 or 13	ICP-OES, ICP-MS, AAS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. These samples were dissolved totally (樣品已完全溶解) by pre-conditioning method 2. Test flow chart (測試流程圖)
六價鉻 Hexavalent Chromium	IEC 62321 :2008 IEC 111 IEC method, section 8 (metals only) or 9 (polymers only) ISO 3613 (metals ONLY) EPA 3060A (plastics and non-metals ONLY)	ICP-AES UV-VIS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖) 測試方法補充 Extension for test methods: 1. 金屬材質: IEC 62321 (Annex B) - 點測試法/沸水萃取法 Metal materials: IEC 62321 (Annex B) - Spot-test/ boiling-water-extraction procedure 2. 針對含有金屬鍍層的零件, 不接受以 EPA 3060A 進行檢測。
聚溴聯苯 PBBs	IEC 62321 :2008 IEC 111 IEC method, section 7	GC/MS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖)
聚溴二苯醚 (包含十溴聯苯醚) PBDEs (including DecaBDE)	IEC 62321 :2008 IEC 111 IEC method, section 7	GC/MS	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖)
溴 Bromine (Br)	EN14582:2007 IEC 61189-2:2006 US EPA SW-846 Method 5050 EN 50267-2-1:1999 (建議使用: EN14582)	IC	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖) 測試方法補充 Extension for test methods: 1. EN 14582 : 2007 Annex A 不適合作為前處理的方法 EN 14582 : 2007 Annex A is not acceptable for the method of
氯 Chlorine (Cl)	EN14582:2007 IEC 61189-2:2006 US EPA SW-846 Method 5050 EN 50267-2-1:1999 (建議使用: EN14582)	IC	請要求第三方測試單位, 包含下列事項於報告中: Please request 3rd party to include the followings in report: 1. Test flow chart (測試流程圖) 測試方法補充 Extension for test methods: 1. EN 14582 : 2007 Annex A 不適合作為前處理的方法 EN 14582 : 2007 Annex A is not acceptable for the method of

6. 附錄 Appendix

表 4 RoHS 豁免清單

Table 4 RoHS Exemptions

Item 分類	No. 編號	RoHS Exemption RoHS 豁免清單	預計到期日 Expected Expiry Date
Mercury 汞	1	Mercury in single capped fluorescent lamps	2016/7/21
Mercury 汞	2a	Mercury in double-capped linear fluorescent lamps for general lighting purposes	2016/7/21
Mercury 汞	2b	Mercury in other fluorescent lamps	2016/7/21
Mercury 汞	3	Mercury (Hg) in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes	2016/7/21
Mercury 汞	4a	Mercury in other low pressure discharge lamps (Max 15.0 mg per lamp)	2016/7/21
Mercury 汞	4c	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes	2016/7/21
Mercury 汞	4e	Mercury in metal halide lamps (MH)	2016/7/21
Mercury 汞	4f	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	2021/1/1
Lead 鉛	5a	Lead in glass of cathode ray tubes	
Lead 鉛	5b	Lead in glass of fluorescent tubes NOT exceeding 0.2% by weight	2020/7/1
Lead 鉛	6a	Lead as an alloying element in steel for machining purposes and in batch hot dip galvanized steel items containing up to 0.35% lead by weight.	2020/7/1
Lead 鉛	6b	Lead as an alloying element in aluminum containing up to 0.4% lead by weight.	2020/7/1
Lead 鉛	6c	Lead in copper alloys containing up to 4% lead by weight	2020/7/1
Lead 鉛	7a	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)	2020/7/1
Lead 鉛	7b	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunications	2016/7/21
Lead 鉛	7c-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	2020/7/1
Lead 鉛	7c-II	Lead in dielectric ceramic in capacitors for a voltage 125 V AC or 250V DC or higher	2020/7/1
Lead 鉛	7c-IV	Lead in PZT based dielectric ceramic materials of capacitors being part of integrated circuits or discrete semiconductors	2020/7/1
Cadmium 鎘	8b	Cadmium and its compounds in electrical contacts	2016/7/21
Hexavalent chromium 六價鉻	9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
Lead 鉛	9b	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	2016/7/21
Lead 鉛	13a	Lead in white glasses used for optical applications	2020/7/1
Cadmium 鎘	13b	Cadmium and lead in filter glasses	2020/7/1
Lead 鉛	15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages.	2020/7/1

Item 分類	No. 編號	RoHS Exemption RoHS 豁免清單	預計到期日 Expected Expiry Date
Lead 鉛	17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
Lead and Cadmium 鉛及鎘	21	Lead and cadmium in printing inks for the application of enamels on borosilicate glass. (2006/691/EC) 用於硼矽玻璃瓷漆的印墨中的鉛	
Lead 鉛	24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors. (2006/691/EC) 通孔盤狀及平面陣列陶瓷多層電容器焊料所含的鉛	
Lead 鉛	25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	2016/7/21
Lead 鉛	29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (2006/690/EC) 在第69/493/EEC 號指令附件1 第1、2、3 及4 分類定義下之水晶玻璃的鉛	
Lead 鉛	30	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting). 用於無汞平面螢光燈（例如：用於液晶顯示器、設計或工業照明）的焊料中的鉛。 (2008/385/EC)	
Lead 鉛	31	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes. (2008/385/EC) 用於氬和氪鐳射管防護窗組件的封裝玻璃料裏的鉛的氧化物。	
Lead 鉛	32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
Lead 鉛	33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers. (2009/443/EC) 涉及電源變壓器中直徑100微米及以下細銅線所用焊料中的鉛	
Lead 鉛	34	Lead in cermet-based trimmer potentiometer elements. (2009/443/EC) 金屬陶瓷微調電位計中的鉛	
Lead 鉛	37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body. (2009/443/EC) 基於硼酸鋅玻璃體的高壓二極體電鍍層的鉛	
Cadmium 鎘	38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide. (2009/443/EC) 用於鋁結合氧化鈹的厚膜漿料中的鎘和氧化鎘	
Cadmium 鎘	39a	Cadmium in colour converting II-VI LEDs (<10µg Cd per mm2 of light-emitting area) for use in solid state illumination or display system	2017/6/30
Cadmium 鎘	39b	Cadmium in down shifting cadmium based semiconductor nanocrystal quantum dots for use in display lighting applications (<0.2 µg Cd per mm2 of display screen area)	2018/6/30

註:

1. 排外條款預計到期日，參考歐盟最新要求，及網址<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0065>
Exemption Expected Expiry Date refers to the EU latest requirement and URL as above.
2. 為求更好的管控，客戶額外要求可能較預計到期日提前，須以客戶要求為準。
To have a better control, customers' additional requests may advance the expected expiry date, and should be governed.

表5 鎘(Cd)以及鎘化合物一覽表

Table 5 List of Cadmium (Cd) and Cadmium compounds

CAS No.	名稱
7440-43-9	Cadmium
1306-19-0	Cadmium oxide
1306-23-6	Cadmium sulfide
10108-64-2	Cadmium chloride
10124-36-4	Cadmium sulfate
	Other cadmium compounds

表6 鉛(Pb)以及鉛化合物一覽表

Table 6 List of Lead (Pb) and Lead compounds

CAS No.	名稱 Names
7439-92-1	Lead
7446-14-2	Lead (II) sulfate
598-63-0	Lead (II) carbonate
1319-46-6	Lead hydrocarbonate
301-04-2	Lead acetate
6080-56-4	Lead (II) acetate, trihydrate
7446-27-7	Lead phosphate
12069-00-0	Lead selenide
1309-60-0	Lead (IV) oxide
1314-41-6	Lead (II,IV) oxide
1314-87-0	Lead (II) sulfide
1317-36-8	Lead (II) oxide
1319-46-6	Lead (II) carbonate basic
1344-36-1	Lead hydroxidcarbonate
7446-27-2	Lead (II) phosphate
7758-97-6	Lead (II) chromate
12060-00-3	Lead (II) titanate
15739-80-7	Lead sulfate, sulphurid acid, lead salt
12202-17-4	Lead sulphate, tribasic
1072-35-1	Lead stearate
	Other lead compounds

表7 汞(Hg)以及汞化合物一覽表

Table 7 List of Mercury (Hg) and Mercury compounds

CAS No.	名稱 Names
7439-97-6	Mercury
33631-63-9	Mercuric chloride
7487-94-7	Mercury (II) chloride
7783-35-9	Mercuric sulfate
10045-94-0	Mercuric nitrate
21908-53-2	Mercuric (II) oxide
1344-48-5	Mercuric sulfide
	Other mercury compounds

表8 六價鉻(Cr6+)化合物一覽表

Table 8 List of Hexavalent chromium (Cr6+) compounds

CAS No.	名稱 Names
1333-82-0	Chromium (VI) oxide
10294-40-3	Barium chromate
13765-19-0	Calcium chromate
1066-30-4	Chromic acetate
1333-82-0	Chromium trioxide
7758-97-6	Lead (II) chromate
7775-11-3	Sodium chromate
10588-01-9	Sodium dichromate
7789-06-2	Stroncium dichromate
7778-50-9	Potassium dichromate
7789-00-6	Potassium chromate
13530-65-9	Zinc chromate

表9 聚溴聯苯 (PBBs)一覽表

Table 9 List of Polybrominated diphenylethers (PBBs)

CAS No.	名稱 Names
2052-07-05, 2113-57-7, 92-66-0	Monobromobiphenyl
92-86-4	Dibromobiphenyl
59080-34-1, 51202-79-0	Tribromobiphenyl
40088-45-7	Tetrabromobiphenyl
56307-79-0	Pentabromobiphenyl
59080-40-9, 36355-01-8, 67774-32-7	Hexabromobiphenyl
35194-78-6, 6355-01-8	Heptabromobiphenyl
61288-13-9	Octabromobiphenyl
27753-52-2	Nonabromobiphenyl
13654-09-06	Decabromobiphenyl
59536-65-1	Polybrominated Biphenyl, Polybromobiphenyl(s), Polybromodiphenyl(s)

表10 聚溴聯苯醚 (PBDEs) (包含十溴聯苯醚 [DecaBDE])一覽表

Table 10 List of Polybrominated diphenylethers (PBDEs) (including decabromodiphenyl ether [DecaBDE])

CAS No.	名稱 Names
101-55-3	Monobromobiphenyl Ether
2050-47-7	Dibromobiphenyl Ether
49690-94-0	Tribromobiphenyl Ether
40088-47-9	Tetrabromobiphenyl Ether
32534-81-9	Pentabromobiphenyl Ether
36483-60-0	Hexabromobiphenyl Ether
68928-80-3	Heptabromobiphenyl Ether
32536-52-0	Octabromobiphenyl Ether
63936-56-1	Nonabromobiphenyl Ether
1163-19-5	Decabromobiphenyl Ether (DecaBDE)
Chemical class; no CAS number assigned	Polybrominated Biphenyl Ether(s), Polybrominated Biphenyl Oxide(s)

表11 銻及其化合物一覽表

Table 11 List of Antimony and Antimony compounds

CAS No.	名稱 Names
7440-36-0	Antimony (metallic)
1309-64-4	Antimony trioxide
1314-60-9	Antimony pentoxide
10025-91-9	Antimony trichloride
15432-85-6	Sodium antimonate
	Other antimony compounds

表12 含砷(As)以及砷化合物一覽表

Table 12 List of Arsenic(As) and Arsenic compounds

CAS No.	名稱 Names
7440-38-2	Arsenic
1303-00-0	Gallium arsenide
7778-44-1	Calcium arsenate
27152-57-4	Calcium arsenite
1303-28-2	Arsenic pentoxide
1327-53-3	Arsenic trioxide
10124-50-2	Potassium arsenite
7784-41-0	Potassium arsenate
3687-31-8	Lead arsenate
	Other arsenic compounds

表13 石棉及其他化合物一覽表

Table 13 List of Asbestos and its compounds

CAS No.	名稱 Names
1332-21-4	Asbestos
77536-66-4	Actinolite
12172-73-5	Amosite (Grunerite)
77536-67-5	Anthophyllite
12001-29-5	Chrysotile
12001-28-4	Crocidolite
77536-68-6	Tremolite

表14 鈹及鈹化合物一覽表

Table 14 List of Beryllium and Beryllium compounds

CAS No.	名稱 Names
7440-41-7	Beryllium
12770-50-2	Beryllium-aluminum alloy
7787-47-5	Beryllium chloride
7787-49-7	Beryllium fluoride
13327-32-7	Beryllium hydroxide
1304-56-9	Beryllium oxide
13598-15-7	Beryllium phosphate
13510-49-1	Beryllium sulfate
7787-56-6	Beryllium sulfate tetrahydrate
1302-52-9	Beryllore
	Other beryllium compounds

表15 銻及其化合物一覽表

Table 15 List of Bismuth and Bismuth compounds

CAS No.	名稱 Names
7440-69-9	Bismuth
1304-76-3	Bismuth trioxide
10361-44-1	Bismuth nitrate
	Other bismuth compounds

表16 含氯碳氫化合物一覽表

Table 16 List of Chlorinated Hydrocarbons

CAS No.	名稱 Names
75-35-4	二氯乙烷 1,1 Dichloroethylene
76-01-7	五氯乙烷 Pentachloroethane
75-09-2	二氯甲烷(CH ₂ Cl ₂) Methylenechloride
56-23-5	四氯甲烷 Tetrachloromethane
630-20-6	三氯甲烷(Chloroform) 1,1,1,2 Tetrachloroethane
79-34-5	1,1,2,2-四氯乙烷 1,1,2,2 Tetrachloroethane
127-18-4	四氯乙烷(C ₂ Cl ₄) Tetrachloroethylene
67-66-3	三氯甲烷 Trichloromethane
79-00-5	1,1,2-三氯乙烷 1,1,2 Trichloroethane
79-01-6	三氯乙烷(C ₂ HCl ₃) Trichloroethylene
67-72-1	六氯乙烷 Hexachloroethane
71-55-6	1,1,1 Trichloroethane
542-88-1	Bis (chloromethyl) ether
87-86-5	Pentachlorophenol
Chemical class; no CAS number assigned	Polychlorinated Phenols and their salts
75-01-4	Vinyl Chloride (monomer)

表17 鹵化芳香族物質一覽表

Table 17 List of the Halogenated aromatic substances

CAS No.	名稱 Names
1336-36-3	Polychlorinated Biphenyls (PCB)
No CAS No. assigned	Halogenated diarylalkanes
No CAS No. assigned	Halogenated benzenes

表18 鹵化二苯基甲烷一覽表

Table 18 List of Halogenated diphenyl methanes

CAS No.	簡稱 Abbreviation	名稱 Names
76253-60-6	Ugilec 141	單甲基四氯二苯基甲烷 Monomethyltetrachlorodiphenylmethane
81161-70-8	Ugilec 121, Ugilec 21	單甲基二氯二苯基甲烷 Monomethyldichlorodiphenylmethane
99688-47-8	DBBT	單甲基二溴二苯基甲烷 Monomethyldibromodiphenylmethane

表19 鎳(Ni)以及鎳化合物一覽表

Table 19 List of Nickel (Ni) and Nickel compounds

CAS No.	名稱 Names
7440-02-0	Nickel
373-02-4	Nickel acetate
3333-67-3	Nickel carbonate
13463-39-3	Nickel carbonyl
12054-48-7 or 11113-74-9	Nickel hydroxide
1271-28-9	Nickelocene
1313-99-1	Nickel oxide
12035-72-2	Nickel subsulfide
-	Other nickel compounds

表20 有機錫化合物(含三丁基錫(TBT)化合物、三苯基錫(TPT)化合物、三丁基氧化錫類(TBTO)一覽表

Table 20 List of Organic tin compounds [Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)]

CAS No.	名稱 Names
56-35-9	Bis(tri-n-butyltin) oxide
1803-12-9	Triphenyltin N,N'-dimethyldithiocarbamate
379-52-2	Triphenyltin fluoride
900-95-8	Triphenyltin acetate
639-58-7	Triphenyltin chloride
76-87-9	Triphenyltin hydroxide
18380-71-7 18380-72-8 47672-31-1 94850-90-5	Triphenyltin fatty acid salts (C=9-11)
7094-94-2	Triphenyltin chloroacetate
2155-70-6	Tributyltin methacrylate
6454-35-9	Bis(tributyltin) fumarate
1983-10-4	Tributyltin fluoride
31732-71-5	Bis(tributyltin) 2,3-dibromosuccinate
56-36-0	Tributyltin acetate
3090-36-6	Tributyltin laurate
4782-29-0	Bis(tributyltin) phthalate
67772-01-4	Copolymer of alkyl acrylate, methyl methacrylate and tributyltin Methacrylate(alkyl; C=8)
6517-25-5	Tributyltin sulfamate
14275-57-1	Bis(tributyltin) maleate
1461-22-9	Tributyltin chloride
5409-17-2	Mixture of tributyltin cyclopentanecarboxylate and its analogs (Tributyltin naphthenate)
26239-64-5	Mixture of tributyltin 1,2,3,4,4a, 4b, 5,6,10,10a-decahydro-7-isopropyl-1,
No CAS No. assigned	Other Tributyl Tins & Triphenyl Tins
1461-23-0	Tributyl tin bromide
56-35-9	Tributyl tin oxide (TBTO)
668-34-8	Triphenyl tin
639-58-7	Triphenyl tin chloride
900-95-8	Triphenyl tin acetate

These tables are taken from the Joint Industry Guide (JIG) and used with the permission of the Electronic Industries Alliance (EIA).
Note. Only short-chain chlorinated paraffins with carbon length of 10 to 13 atoms are covered.

表21-1 臭氧層危害物質 (ODS) 及其構體

Table 21-1 Ozone Depleting Substances and Isomers

CAS No.	名稱 Names
氟氯碳化物 (CFCs) Chlorofluorocarbons (CFCs):	
75-69-4	Trichlorofluoromethane (CFC-11) and its isomers
75-71-8	Dichlorodifluoromethane (CFC12) and its isomers
75-72-9, 185009-43-2, DR ² 39349-94-5, DR ² 56996-61-3, DR ² 57762-34-2	Chlorotrifluoromethane (CFC 13) and its isomers
354-56-3	Pentachlorofluoroethane (CFC 111) and its isomers
76-12-0	Tetrachlorodifluoroethane (CFC 112) and its isomers
354-58-5	Trichlorotrifluoroethane (CFC 113)
76-14-2	Dichlorotetrafluoroethane (CFC 114) and its isomers
76-15-3	Monochloropentafluoroethane (CFC 115) and its isomers
422-78-6, 135401-87-5	Heptachlorofluoropropane (CFC 211) and its isomers
3182-26-1	Hexachlorodifluoropropane (CFC 212) and its isomers
2354-06-5	Pentachlorotrifluoropropane (CFC 213) and its isomers
29255-31-0	Tetrachlorotetrafluoropropane (CFC 214) and its isomers
1599-41-3	Trichloropentafluoropropane (CFC 215) and its isomers
4259-43-2	1,1,1-Trichloropentafluoropropane
76-17-5	1,2,3-Trichloropentafluoropropane
661-97-2	Dichlorohexafluoropropane (CFC 216) and its isomers
422-86-6, 76-18-6	Monochloroheptafluoropropane (CFC 217) and its isomers
海龍 Halons:	
353-59-3, 11104-73-7	Bromochlorodifluoromethane (Halon 1211) and its isomers
75-63-8, 62395-25-9	Bromotrifluoromethane (Halon 1301) and its isomers
124-73-2, DR ² 76199-55-8	Dibromotetrafluoroethane (Halon 2402) and its isomers
56-23-5	四氯化碳 Carbon Tetrachloride (Tetrachloromethane) and its isomers
71-55-6	1,1,1 - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane and its isomers
74-83-9	溴化甲烷及其異構體 Bromomethane (Methyl Bromide) and its isomers
1511-62-2	Bromodifluoromethane and isomers (HBFCs) and its isomers
74-97-5	溴氯甲烷 Chlorobromomethane
These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.	
含氯氟烴及其異構體(HCFCs) Hydrochlorofluorocarbons (HCFCs) and their isomers:	
75-43-4	Dichlorofluoromethane (HCFC 21)
75-45-6	Chlorodifluoromethane (HCFC 22)
593-70-4	Chlorofluoromethane (HCFC 31)
134237-32-4 DR ² 134237-32-4 ³	Tetrachlorofluoroethane (HCFC 121)
354-11-0	1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)
354-14-3	1,1,2,2-tetrachloro-1-fluoroethane
41834-16-6 55949-46-7 354-21-2 DR ² 134237-33-5 ³ DR ² 62549-18-2 354-15-4	Trichlorodifluoroethane (HCFC 122) Trichloro-1,1-difluoroethane 1,2,2-trichloro-1,1-difluoroethane
354-12-1	1,2,2-tichloro-1,2-difluoroethane 1,1,1-tichloro-2,2-difluoroethane 1,1,2-tichloro-2,2-difluoroethane
34077-87-7 90454-18-5 306-83-2 354-23-4 812-04-4	Dichlorotrifluoroethane(HCFC 123) Dichloro-1,1,2-trifluoroethane 2,2-dichloro-1,1,1-trifluoroethane 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a) 1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b) 2,2-dichloro-1,1,2-trifluoroethane (HCFC-123b)
63938-10-3 2837-89-0 354-25-6	Chlorotetrafluoroethane (HCFC 124) 2-chloro-1,1,1,2-tetrafluoroethane 1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)
27154-33-2 (134237-34-6 ³) 359-28-4 90134-98-8 811-95-0 2366-36-1	Trichlorofluoroethane (HCFC 131) 1-Fluoro-1,2,2-trichloroethane 1,1,2-trichloro - 1 (or 2)-fluoroethane 1,1,1-trichloro-2-fluoroethane (HCFC131a) 1,1,1-trichloro-2-fluoroethane (HCFC-131b)
25915-78-0 55494-45-6 31153-51-2 33579-37-2 33489-30-4 1649-08-7 1842-05-3 471-43-2 431-06-1	Dichlorodifluoroethane (HCFC 132) Dichloro-1,1-difluoroethane 1,1-dichlorodifluoroethane (meso) 1,2-dichloro-1,2-difluoroethane (R,R) (+,-) 1,2-dichloro-1,2-difluoroethane 1,2-dichloro-1,1-difluoroethane (HCFC 132b) 1,1-dichloro-1,2-difluoroethane (HFCF 132c) 1,1-dichloro-2,2-difluoroethane 1,2-dichloro-1,2-difluoroethane
1330-45-6 DR ² 38097-47-1 431-07-2 421-04-5 75-88-7	Chlorotrifluoroethane (HCFC 133) 1-chloro-1,2,2-trifluoroethane 1-chloro-1,1,2-trifluoroethane 2-chloro-1,1,1-trifluoroethane (HCFC 133a)
25167-88-8 1717-00-6 430-57-9 430-53-5	Dichlorofluoroethane(HCFC 141) 1,1-dichloro-1-fluoroethane (HCFC-141b) 1,2-dichloro-1-fluoroethane 1,1-dichloro-2-fluoroethane

25497-29-4 DR ² 58561-84-5 DR ² 27175-71-9 55949-44-5 338-65-8 75-68-3 DR ² 65762-25-6 25497-29-4	Chlorodifluoroethane (HCFC 142) Chloro-1,1-difluoroethane 2-chloro-1,1-difluoroethane 1-chloro-1,1-difluoroethane (HCFC142b) 1-chloro-1,2-difluoroethane (HCFC142a)
25497-29-4 (134237-35-7 ³) 431-79-8 422-40-2 422-26-4 422-28-6	Hexachlorofluoropropane (HCFC 221) 1,1,1,2,3,3-hexachloro-3-fluoropropane 1,1,1,2,3,3-hexachloro-2-fluoropropane 1,1,1,2,2,3-hexachloro-1-fluoropropane 1,1,2,2,3,3-hexachloro-1-fluoropropane 1,1,1,3,3,3-hexachloro-2-fluoropropane 1,1,1,2,2-pentachloro-3,3-difluoropropane
116867-32-4 (134237-36-8 ³) 421-82-3 431-80-1 422-49-1 422-30-0 422-27-5	Pentachlorodifluoropropane (HCFC 222) 1,1,2,3,3-pentachloro-1,3-difluoropropane 1,1,1,2,3-pentachloro-3,3-difluoropropane 1,1,1,3,3-pentachloro-2,2-difluoropropane 1,2,2,3,3-pentachloro-1,1-difluoropropane 1,1,1,2,3-pentachloro-2,3-difluoropropane 1,1,1,3,3-pentachloro-2,3-difluoropropane (1,1,3,3,3-pentachloro-1,2-difluoropropane) 1,1,2,2,3-pentachloro-1,3-difluoropropane 1,1,2,3,3-pentachloro-1,2-difluoropropane
29470-95-9 (134237-37-9 ³) 54002-59-4 431-83-4 431-81-2 422-52-6 422-50-4 422-41-3 422-35-5 422-29-7	Tetrachlorotrifluoropropane (HCFC 223) 1,1,1,3-tetrachloro-2,3,3-trifluoropropane 1,1,2,3-tetrachloro-1,3,3-trifluoropropane 1,1,1,2-tetrachloro-3,3,3-trifluoropropane 1,1,3,3-tetrachloro-1,2,2-trifluoropropane 1,1,1,3-tetrachloro-2,2,3-trifluoropropane 1,2,3,3-tetrachloro-1,1,2-trifluoropropane 2,2,3,3-tetrachloro-1,1,1-trifluoropropane 1,1,2,2-tetrachloro-1,3,3-trifluoropropane 1,1,1,2-tetrachloro-2,3,3-trifluoropropane 1,1,3,3-tetrachloro-1,2,3-trifluoropropane 1,2,2,3-tetrachloro-1,1,3-trifluoropropane 1,1,2,3-tetrachloro-1,2,3-trifluoropropane
127564-91-4 (134237-38-0 ³) 53063-53-9 53063-52-8 431-84-5 422-54-8 422-53-7 422-51-5 422-47-9 422-42-4 422-32-2	Trichlorotetrafluoropropane (HCFC 224) 1,1,3-trichloro-1,2,3,3-tetrafluoropropane 1,1,1-trichloro-2,3,3,3-tetrafluoropropane 1,1,2-trichloro-1,3,3,3-tetrafluoropropane 1,3,3-trichloro-1,1,2,2-tetrafluoropropane 1,1,3-trichloro-1,2,2,3-tetrafluoropropane 1,1,1-trichloro-2,2,3,3-tetrafluoropropane 2,3,3-trichloro-1,1,1,2-tetrafluoropropane 1,2,3-trichloro-1,1,2,3-tetrafluoropropane 1,2,2-trichloro-1,1,3,3-tetrafluoropropane 2,2,3-trichloro-1,1,1,3-tetrafluoropropane 1,1,2-trichloro-1,2,3,3-tetrafluoropropane
127564-92-5 (2713-09-9) 128903-21-9 422-48-0 422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2 111512-55-1 111512-51-7	Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225) 2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC 225aa) 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba) 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb) 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca) 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb) 1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC 225cc) 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da) 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea) 1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC 225eb) (R,R) 2,3-dichloro-1,1,1,2,3-pentafluoropropane (R,S) 2,3-dichloro-1,1,1,2,3-pentafluoropropane
28987-04-4 (134308-72-8 ³) 51346-64-6 431-87-8 422-57-1 422-55-9 359-58-0	Chlorohexafluoropropane (HCFC 226) 2-chloro-1,1,1,2,3,3-hexafluoropropane 2-chloro-1,1,1,3,3,3-hexafluoropropane 3-chloro-1,1,1,2,2,3-hexafluoropropane 1-chloro-1,1,2,2,3,3-hexafluoropropane 1-chloro-1,1,2,3,3,3-hexafluoropropane
134190-48-0 421-94-3	Pentachlorofluoropropane (HCFC 231) 1,1,1,2,3-pentachloro-2-fluoropropane 1,1,2,3,3-pentachloro-2-fluoropropane 1,1,1,3,3-pentachloro-3-fluoropropane 1,1,2,2,3-pentachloro-1-fluoropropane 1,1,1,2,2-pentachloro-3-fluoropropane 1,1,1,2,3-pentachloro-3-fluoropropane 1,1,1,3,3-pentachloro-2-fluoropropane 1,1,2,2,3-pentachloro-3-fluoropropane 1,1,2,3,3-pentachloro-1-fluoropropane

<p>134237-39-1 (127564-82-3) 67879-59-8 1112-14-7 677-54-3 460-89-9</p>	<p>Tetrachlorodifluoropropane (HCFC 232)</p> <p>1,2,3,3-tetrachloro-1,1-difluoropropane 1,1,3,3-tetrachloro-2,2-difluoropropane 1,1,1,3-tetrachloro-2,2-difluoropropane 1,1,1,3-tetrachloro-3,3-difluoropropane 1,1,1,3-tetrachloro-2,3-difluoropropane 1,1,1,2-tetrachloro-2,3-difluoropropane 1,1,1,2-tetrachloro-3,3-difluoropropane 1,1,2,3-tetrachloro-1,2-difluoropropane 1,1,2,3-tetrachloro-1,3-difluoropropane 1,2,3,3-tetrachloro-1,2-difluoropropane 1,2,2,3-tetrachloro-1,1-difluoropropane 1,2,2,3-tetrachloro-1,3-difluoropropane 1,1,3,3-tetrachloro-1,3-difluoropropane 1,1,2,2-tetrachloro-3,3-difluoropropane 1,1,2,2-tetrachloro-1,3-difluoropropane</p>
<p>61623-04-9 (134237-40-4³) 131221-36-8 131211-71-7 54377-32-1 54306-56-8 13058-99-6 7125-84-0 7125-83-9</p> <p>431-51-6 421-99-8 421-95-4 333-26-6</p>	<p>Trichlorotrifluoropropane (HCFC 233)</p> <p>1,1,3-trichloro-2,2,3-trifluoropropane 1,1,1-trichloro-2,2,3-trifluoropropane 1,1,3-trichloro-1,2,3-trifluoropropane 1,1,1-trichloro-2,3,3-trifluoropropane 1,1,2-trichloro-2,3,3-trifluoropropane 1,1,1-trichloro-3,3,3-trifluoropropane</p> <p>1,1,1-Trichloro-3,3,3-trifluoropropane</p> <p>2,3,3-trichloro-1,1,1-trifluoropropane 1,1,3-trichloro-1,2,2-trifluoropropane 1,2,3-trichloro-1,1,2-trifluoropropane 1,1,3-trichloro-1,3,3-trifluoropropane 1,1,2-trichloro-1,2,3-trifluoropropane 1,2,3-trichloro-1,2,3-trifluoropropane 1,1,2-trichloro-1,3,3-trifluoropropane 1,3,3-trichloro-1,1,2-trifluoropropane 2,2,3-trichloro-1,1,3-trifluoropropane 1,2,3-trichloro-1,1,3-trifluoropropane 1,2,2-trichloro-1,1,3-trifluoropropane</p>
<p>127564-83-4</p> <p>76140-39-1 70341-81-0 70192-63-1 64712-27-2 53149-65-8 53063-54-0 17705-30-5 4071-01-6 425-94-5 422-00-5</p>	<p>Dichlorotetrafluoropropane (HCFC 234)</p> <p>1,3-dichloro-1,1,3,3-tetrafluoropropane 1,3-dichloro-1,2,2,3-tetrafluoropropane 1,1-dichloro-1,2,2,3-tetrafluoropropane 1,1-dichloro-1,3,3,3-tetrafluoropropane (R,R) 1,3-dichloro-1,1,2,3-tetrafluoropropane 3,3-dichloro-1,1,1,2-tetrafluoropropane 2,2-dichloro-1,1,3,3-tetrafluoropropane 1,1-dichloro-2,2,3,3-tetrafluoropropane 1,2-dichloro-1,2,3,3-tetrafluoropropane 1,3-dichloro-1,1,2,2-tetrafluoropropane 2,3-dichloro-1,1,1,3-tetrafluoropropane 1,1-dichloro-1,2,3,3-tetrafluoropropane 1,2-dichloro-1,1,3,3-tetrafluoropropane 2,3-dichloro-1,1,1,2-tetrafluoropropane 2,2-dichloro-1,1,1,3-tetrafluoropropane 1,2-dichloro-1,1,2,3-tetrafluoropropane 1,3-dichloro-1,1,2,3-tetrafluoropropane</p>
<p>108662-83-5 (134237-41-5³) 134237-41-5 134251-06-2 28103-66-4 679-99-2 677-55-4 460-92-4</p> <p>422-02-6</p>	<p>Chloropentafluoropropane (HCFC 235)</p> <p>3-chloro-1,1,1,2,3-pentafluoropropane 2-chloro-1,1,1,3,3-pentafluoropropane 1-chloro-1,2,2,3,3-pentafluoropropane 1-chloro-1,1,2,2,3-pentafluoropropane 1-chloro-1,1,3,3,3-pentafluoropropane 1-Chloro-1,1,3,3,3-pentafluoropropane</p> <p>2-chloro-1,1,1,2,3-pentafluoropropane 1-chloro-1,1,2,3,3-pentafluoropropane 2-chloro-1,1,2,3,3-pentafluoropropane</p>
<p>134190-49-1³ 84816-05-7 23153-22-2 21981-25-9 7126-06-9 3175-26-6 3175-25-5 666-27-3</p>	<p>Tetrachlorofluoropropane (HCFC 241)</p> <p>1,1,1,2-tetrachloro-3-fluoropropane 1,1,1,3-tetrachloro-3-fluoropropane 1,1,2,3-tetrachloro-3-fluoropropane 1,1,2,2-tetrachloro-1-fluoropropane 1,1,2,3-tetrachloro-2-fluoropropane 1,1,1,2-tetrachloro-2-fluoropropane 1,1,2,3-tetrachloro-1-fluoropropane 1,1,1,3-tetrachloro-2-fluoropropane 1,1,2,2-tetrachloro-3-fluoropropane 1,2,2,3-tetrachloro-1-fluoropropane 1,1,3,3-tetrachloro-1-fluoropropane 1,1,3,3-tetrachloro-2-fluoropropane</p>

<p>127564-90-3 (134237-42-6³) 460-63-9 7164-14-9 1112-13-6 431-24-3 1112-05-6 7126-05-8 7126-04-7</p>	<p>Trichlorodifluoropropane (HCFC 242)</p> <p>1,3,3-trichloro-1,1-difluoropropane 1,2,3-trichloro-1,2-difluoropropane 1,1,3-trichloro-2,2-difluoropropane 1,2,3-trichloro-1,1-difluoropropane 1,1,1-trichloro-2,2-difluoropropane 1,2,2-trichloro-1,1-difluoropropane 1,1,2-trichloro-1,2-difluoropropane 1,1,1-trichloro-2,3-difluoropropane 1,1,2-trichloro-1,3-difluoropropane 1,1,3-trichloro-1,2-difluoropropane 1,1,2-trichloro-2,3-difluoropropane 1,2,2-trichloro-1,3-difluoropropane 2,2,3-trichloro-1,1-difluoropropane 1,1,1-trichloro-3,3-difluoropropane 1,1,3-trichloro-1,3-difluoropropane 1,1,2-trichloro-3,3-difluoropropane 1,1,3-trichloro-2,3-difluoropropane 1,2,3-trichloro-1,3-difluoropropane</p>
<p>116890-51-8 (134237-43-7³) 7126-01-4 7125-99-7 7126-00-3 338-75-0 67406-68-2 70192-70-0 460-69-5</p>	<p>Dichlorotrifluoropropane (HCFC 243)</p> <p>2,2-dichloro-1,1,1-trifluoropropane 1,1-dichloro-1,2,2-trifluoropropane 1,2-dichloro-1,1,2-trifluoropropane 2,3-dichloro-1,1,1-trifluoropropane 1,3-dichloro-1,2,2-trifluoropropane 1,1-dichloro-2,2,3-trifluoropropane 3,3-Dichloro-1,1,1-trifluoropropane</p> <p>1,3-dichloro-1,1,2-trifluoropropane 1,2-dichloro-1,1,3-trifluoropropane 1,1-dichloro-1,2,3-trifluoropropane 2,3-dichloro-1,1,2-trifluoropropane 2,2-dichloro-1,1,3-trifluoropropane 1,2-dichloro-1,2,3-trifluoropropane 1,3-dichloro-1,1,3-trifluoropropane 1,1-dichloro-1,3,3-trifluoropropane 3,3-dichloro-1,1,2-trifluoropropane 2,3-dichloro-1,1,3-trifluoropropane 1,3-dichloro-1,2,3-trifluoropropane</p>
<p>134190-50-4³ 117970-90-8 679-85-6</p> <p>67406-66-0 2730-64-5 19041-02-2 421-73-8 421-75-0</p>	<p>Chlorotetrafluoropropane (HCFC 244)</p> <p>2-chloro-1,1,1,3-tetrafluoropropane 3-chloro-1,1,2,2-tetrafluoropropane</p> <p>1-chloro-1,2,2,3-tetrafluoropropane 1-chloro-1,1,3,3-tetrafluoropropane 2-chloro-1,1,3,3-tetrafluoropropane 2-chloro-1,1,1,2-tetrafluoropropane 1-chloro-1,1,2,2-tetrafluoropropane 1-chloro-1,1,2,3-tetrafluoropropane 3-chloro-1,1,1,2-tetrafluoropropane 2-chloro-1,1,2,3-tetrafluoropropane 3-chloro-1,1,1,3-tetrafluoropropane 3-chloro-1,1,2,3-tetrafluoropropane</p>
<p>134190-51-5³ 84847-80-3 84847-79-0 76985-34-7 76985-33-6 67832-50-2 67832-44-4 7126-16-1 70192-89-1 818-99-5</p> <p>76937-36-5 421-41-0 3175-24-4</p>	<p>Trichlorofluoropropane (HCFC 251)</p> <p>(R,S) (+,-) 1,2,3-trichloro-1-fluoropropane (R,R) (+,-) 1,2,3-trichloro-1-fluoropropane [R(R,S)] 1,2,3-trichloro-1-fluoropropane [R(R,R)] 1,2,3-trichloro-1-fluoropropane (R,S) 1,2,3-trichloro-1-fluoropropane (R,R) 1,2,3-trichloro-1-fluoropropane</p> <p>1,2,3-trichloro-2-fluoropropane 1,2,2-trichloro-3-fluoropropane 1,1,3-trichloro-1-fluoropropane</p> <p>1,1,3-trichloro-2-fluoropropane 1,1,2-trichloro-1-fluoropropane 1,1,2-trichloro-2-fluoropropane 1,1,1-trichloro-2-fluoropropane 1,1,1-trichloro-3-fluoropropane 1,1,2-trichloro-3-fluoropropane 1,1,3-trichloro-3-fluoropropane 1,2,2-trichloro-1-fluoropropane 1,2,3-trichloro-1-fluoropropane</p>

134190-52-6 ³ 1112-01-2 131404-17-6 121612-64-4 7126-15-0 70192-74-4 82578-00-5 819-00-1 111483-26-2 1112-36-3	Dichlorodifluoropropane (HCFC 252) 1,1-dichloro-2,2-difluoropropane 1,1-dichloro-3,3-difluoropropane 1,1-dichloro-1,3-difluoropropane 1,2-dichloro-1,1-difluoropropane 1,2-dichloro-2,3-difluoropropane 2,3-dichloro-1,1-difluoropropane 1,3-dichloro-1,1-difluoropropane 1,3-dichloro-1,2-difluoropropane 1,3-dichloro-2,2-difluoropropane 1,1-dichloro-1,2-difluoropropane 1,1-dichloro-2,3-difluoropropane 1,2-dichloro-1,2-difluoropropane 1,3-dichloro-1,3-difluoropropane 2,2-dichloro-1,1-difluoropropane 2,2-dichloro-1,3-difluoropropane
26588-23-8 (134237-44-8 ³) 421-47-6 460-35-5 134251-05-1 69202-10-4 121612-65-5 83124-56-5 70192-76-6 56758-54-4	Chlorotrifluoropropane (HCFC 253) 2-chloro-1,1,1-trifluoropropane 3-chloro-1,1,1-trifluoropropane (HCFC 253fb) 1-chloro-1,1,2-trifluoropropane 2-chloro-1,1,2-trifluoropropane 3-chloro-1,1,2-trifluoropropane 1-chloro-1,1,3-trifluoropropane 1-chloro-1,2,2-trifluoropropane 1-chloro-2,2,3-trifluoropropane 2-chloro-1,1,3-trifluoropropane 3-chloro-1,1,3-trifluoropropane (1-chloro-1,3,3-trifluoropropane) 1-chloro-1,2,3-trifluoropropane 2-chloro-1,2,3-trifluoropropane
127404-11-9 (134237-45-9 ³) 7799-56-6 53074-31-0 53074-30-9 7799-55-5 420-97-3 453-01-0 83124-60-1 816-38-6	Dichlorofluoropropane (HCFC 261) 1,1-dichloro-1-fluoropropane 1,1-dichloro-2-fluoropropane 1,1-dichloro-3-fluoropropane 1,1-dichloro-1-fluoropropane 1,2-dichloro-1-fluoropropane 1,2-dichloro-2-fluoropropane 1,2-dichloro-3-fluoropropane 1,3-dichloro-1-fluoropropane 1,3-dichloro-2-fluoropropane 2,2-dichloro-1-fluoropropane
134190-53-7 ³ 421-02-3 430-93-3 DR2 5268567-3 83124-57-6 430-96-6 37161-81-2 102738-79-4 420-99-5	Chlorodifluoropropane (HCFC 262) 1-chloro-1,1-difluoropropane 2-chloro-1,1-difluoropropane 3-chloro-1,1-difluoropropane 1-chloro-1,2-difluoropropane 1-chloro-2,3-difluoropropane 2-chloro-1,3-difluoropropane 1-chloro-2,2-difluoropropane 2-chloro-1,2-difluoropropane 1-chloro-1,3-difluoropropane
134190-54-8 ³ 430-55-7 430-46-6 462-38-4 20372-78-5 420-44-0	Chlorofluoropropane (HCFC 271) 1-chloro-1-fluoropropane 1-chloro-2-fluoropropane 1-chloro-3-fluoropropane 2-chloro-1-fluoropropane 2-chloro-2-fluoropropane
含溴氟烴(HBFCs)及其異構體 Hydrobromofluorocarbons (HBFCs) and their isomers:	
1511-62-2	Bromodifluoromethane and its isomers, Bromodifluoromethane HBFC-22B1 (FM-100) 1511-62-2
1868-53-7	CHFBr ₂ , Dibromofluoromethane
NA	CH ₂ FBr
NA	C ₂ HFBr ₄
NA	C ₂ HF ₂ Br ₃
354-04-1 DR2 66542-88-9	C ₂ HF ₃ Br ₂
NA	C ₂ HF ₄ Br
NA	C ₂ H ₂ FBr ₃
75-82-1	C ₂ H ₂ F ₂ Br ₂
421-06-7	C ₂ H ₂ F ₃ Br
358-97-4	C ₂ H ₃ FBr ₂
NA	C ₂ H ₃ F ₂ Br
762-49-2	C ₂ H ₄ FBr
NA	C ₃ HFBr ₆
NA	C ₃ HF ₂ Br ₅
NA	C ₃ HF ₃ Br ₄
NA	C ₃ HF ₄ Br ₃
NA	C ₃ HF ₅ Br ₂
NA	C ₃ HF ₆ Br
NA	C ₃ H ₂ FBr ₅
NA	C ₃ H ₂ F ₂ Br ₄
NA	C ₃ H ₂ F ₃ Br ₃
NA	C ₃ H ₂ F ₄ Br ₂

NA	C3H2F5Br
NA	C3H3FBr4
NA	C3H3F2Br3
NA	C3H3F3Br2
NA	C3H3F4Br
NA	C3H4FBr3
NA	C3H4F2Br2
NA	C3H4F3Br
NA	C3H5FBr2
NA	C3H5F2Br
NA	C3H6FBr
75-73-0	全氟化碳(PFC) Perfluorocarbon (PFC)
76-16-4	Perfluoroethane

These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.

Tables 21 is based on the Montreal Protocol on Substances that Deplete the Ozone Layer. These tables are taken from the Joint Industry Guide (JIG) and used with the permission of the Electronic Industries Alliance (EIA), http://www.eia.org/new_policy/jig_download.phtml

表 21-2 氟化溫室氣體

Table 21-2 Fluorinated Greenhouse Gases (GHG)

CAS No.	名稱 Names
75-73-0	Carbon tetrafluoride (Perfluoromethane)
76-16-4	Perfluoroethane (Hexafluoroethane)
76-19-7	Perfluoropropane (Octafluoropropane)
355-25-9	Perfluorobutane (Decafluorobutane)
678-26-2	Perfluoropentane (Dodecafluoropentane)
355-42-0	Perfluorohexane (Tetradecafluorohexane)
115-25-3	Perfluorocyclobutane
2551-62-4	Sulfur Hexafluoride (SF6)
75-46-7	HFC-23 CHF3 (Trifluoromethane)
75-10-5	HFC-32 CH2F2 (Difluoromethane)
593-35-3	HFC-41 CH3F (Methyl fluoride)
138495-42-8	HFC-43-10mee C5H2F10 (2H,3H-Decafluoropentane)
354-33-6	HFC-125 C2HF5 (Pentafluoroethane)
359-35-3	HFC-134 C2H2F4 (1,1,2,2-Tetrafluoroethane)
811-97-2	HFC-134a CH2FCF3 (1,1,1,2-Tetrafluoroethane)
75-37-6	HFC-152a C2H4F2 (1,1-Difluoroethane)
430-66-0	HFC-143 C2H3F3 (1,1,2-Trifluoroethane)
420-46-2	HFC-143a C2H3F3 (1,1,1-Trifluoroethane)
431-89-0	HFC-227ea C3HF7 (2H-Heptafluoropropane-)
677-56-5	HFC-236cb CH2FCF2CF3 (1,1,1,2,2,3-hexafluoro-propane)
431-63-0	HFC-236ea CHF2CHF2CF3 (1,1,1,2,3,3-Hexafluoropropane)
690-39-1	HFC-236fa C3H2F6 (1,1,1,3,3,3-Hexafluoropropane)
679-86-7	HFC-245ca C3H3F5 (1,1,2,2,3-Pentafluoropropane)
460-73-1	HFC-245fa CHF2CH2CF3 (1,1,1,3,3-Pentafluoropropane)
406-58-6	HFC-365mfc CF3CH2CF2CH3 (1,1,1,3,3-Pentafluorobutane)

表 22 全氟辛烷磺酸(及其鹽)(PFOS)的除外項目

Table 22 Exemptions for Perfluorooctane sulfonates(PFOS)

1. 商業用的光學膠片 Photographic films for professional use
2. 半導體制程工藝用的光阻劑或塗層材料 Resists for semiconductors
3. 電鍍鉻抑制劑 Mist suppressants for nondecorative hard chromium (VI) plating and wetting agents for use in controlled electroplating systems
4. 濕潤劑 wetting agents for use in controlled electroplating systems

表 23 多氯聯苯(PCBs)及多氯三聯苯(PCTs)一覽表

Table 23 List of Polychlorinated biphenyls (PCBs) and Polychlorinated terphenyls (PCTs)

CAS No.	名稱 Names
1336-36-3	Polychlorinated Biphenyls (PCB)
12767-79-2	Aroclor
11096-82-5	Chlorodiphenyl (Aroclor 1260)
27323-18-8	Kanechlor 500
11097-69-1	Aroclor 1254
26140-60-3	Terphenyls

表 24 多氯化萘(Cl>3, PCNs)一覽表

Table 24 List of Polychlorinated naphthalenes (Cl>3, PCNs)

CAS No.	名稱 Names
1321-65-9	Trichloronaphthalene
1335-88-2	Tetrachloronaphthalene
1321-64-8	Pentachloronaphthalene
2234-13-1	Octachloronaphthalene
70776-03-3	Chlorinated Naphthalenes

表25-1 多環芳香族化合物 (PAHs) 一覽表

Table 25-1 List of the Polycyclic aromatic compounds (PAHs)

CAS No.	簡稱 Abbreviation	名稱 Names
91-20-3	Nap	Naphthalene
208-96-8	AcPy	Acenaphthylene
83-32-9	Acp	Acenaphthene
86-73-7	Flu	Fluorene
85-1-8	PA	Phenanthrene
120-12-7	Ant	Anthracene
206-44-0	FL	Fluoranthene
129-00-0	Pyr	Pyrene
218-01-9	CHR	Chrysene
56-55-3	BaA	Benzo[a]anthracene
205-99-2	BbF	Benzo[b]fluoranthene
207-08-9	BkF	Benzo[k]fluoranthene
50-32-8	BaP	Benzo[a]pyrene
53-70-3	DBA	Dibenzo[a,h]anthracene
193-39-5	IND	Indeno[1,2,3-c,d]pyrene
191-24-2	BghiP	Benzo[g,h,i]perylene

表25-2 多環芳香族化合物 (PAHs) 受管轄之外觀件

Table 25-1 List of the controlled external surfaces of the products for PAHs

分類 Classification	名稱 Names
長時間皮膚接觸 long-term skin contact	可攜式裝置之外觀件 External cases for portable devices
長時間皮膚接觸 long-term skin contact	可攜式裝置之外接電源供應器 External Power Supplies for portable devices
長時間皮膚接觸 long-term skin contact	可攜式裝置之線材 (包含電源線) Cables for portable devices (including power cords and interconnect cables, and so forth)
短時間皮膚接觸 short-term skin contact	外觀 External cases for stationary devices
短時間皮膚接觸 short-term skin contact	桌上型電腦相關產品 relevant products to Desktop PCs
短時間皮膚接觸 short-term skin contact	螢幕 Monitors
短時間皮膚接觸 short-term skin contact	不常移動裝置之外接電源供應器 External Power Supplies for stationary devices
短時間皮膚接觸 short-term skin contact	不常移動裝置之電源線 Power Cables for stationary devices

表26 放射性物質一覽表

Table 26 List of Radioactive substances

CAS No.	名稱 Names
7440-61-6	鈾 (U) Uranium (U)
7440-07-5	鈾 (Pu) Plutonium (Pu)
10043-92-2	氡 (Rn) Radon (Rn)
7440-35-9	錒 (Am) Americium (Am)
7440-29-1	釷 (Th) Thorium (Th)
7440-46-2	銫 (Cs) Cesium (Cs)
7440-24-6	銣 (Sr) Strontium (Sr)
	其他放射性物質 Other radioactive substances

表27 硒及硒化合物一覽表

Table 27 List of Selenium and Selenium compounds

CAS No.	名稱 Names
7782-49-2	Selenium
7783-07-5	Hydrogen selenide
1313-85-5	Sodium selenide
7446-08-4	Selenium dioxide
10112-94-4	Sodium selenate
593-79-3	Dimethyl selenide
12640-89-0	Selenium oxide
	Other selenium compounds

表28 偶氮化合物分解時不得產生的胺類一覽表

Table 28 List of the amines that must not be produced when azo compounds are decomposed

CAS No.	名稱 Names
92-67-1	4-氨基苯基苯 (4-aminodiphenyl)
92-87-5	對二氨基聯苯 (Benzidine)
95-69-2	四氯甲苯胺 (4-chloro-o-toluidine)
91-59-8	2-奈胺 (2-naphthylamine)
97-56-3	鄰氨基偶氮甲苯 (o-aminoazotoluene)
99-55-8	二氨基四硝基甲苯 (2-amino-4-nitrotoluene)
106-47-8	氯苯胺 (p-chloroaniline)
615-05-4	2,4-二氨基甲氧基苯甲醚 (2,4-diaminoanisole)
101-77-9	4,4'-二氨基苯化甲烷 (4,4'-diaminodiphenylmethane)
91-94-1	3,3'-二氯聯苯胺 (3,3'-dichlorobenzidine)
119-90-4	3,3'-二甲氧基聯苯胺 (3,3'-dimethoxybenzidine)
119-93-7	3,3'-二甲基聯苯胺 (3,3'-dimethylbenzidine)
838-88-0	3,3'-二甲基-4,4'-二氨基二苯甲烷
120-71-8	氨基對甲苯甲醚 (p-cresidine)
101-14-4	4,4'-亞甲雙(二氯苯胺) (4,4'-methylene-bis-(2-chloroaniline))
101-80-4	4,4'-氧代苯胺 (4,4'-oxideaniline)
139-65-1	4,4'-硫雙苯胺 (4,4'-thiodianiline)
95-53-4	鄰甲苯胺 (o-toluidine)
95-80-7	2,4-甲代苯二胺 (2,4-tolylenediamine)
137-17-7	2,4,5-均三甲苯胺 (2,4,5-trimethylamine)
90-04-0	鄰氨基苯甲醚 (4-anisidine)
60-09-3	4-氨基偶氮苯 (4-aminoazobenzene)

表29 特定鄰苯二甲酸鹽(鄰苯二甲酸鹽)一覽表
Table 29 List of specific phthalates (phthalic esters)

CAS No.	簡稱 Abbreviation	名稱 Names
117-81-7	DEHP	鄰苯二甲酸(2-乙基己基酯) Di (2-ethylhexyl) phthalate
84-74-2	DBP	鄰苯二甲酸二丁酯 Di-n-butyl phthalate
85-68-7	BBP	鄰苯二甲酸丁基酯 Butyl benzyl phthalate
84-69-5	DIBP	鄰苯二甲酸二異丁酯 Diisobutyl phthalate; Di-i-butyl phthalate
28553-12-0 68515-48-0	DINP	鄰苯二甲酸二異壬酯 Diisononyl phthalate (technical mixture)
26761-40-0 68515-49-1	DIDP	鄰苯二甲酸二異癸酯 Diisodecyl phthalate (technical mixture)
117-84-0	DNOP	鄰苯二甲酸二正辛酯 Di-n-octyl phthalate
84-75-3	DNHP	鄰苯二甲酸二己酯 Di-n-hexyl phthalate
117-82-8	DMEP	鄰苯二甲酸甲氧基乙酯 Dimethoxyethyl phthalate
71888-89-6	DIHP	鄰苯二甲酸二(C6-8支鏈)烷基酯, 富C7 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich
68515-42-4	DHNUP	鄰苯二甲酸二(C7-11支鏈與直鏈)烷基酯 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters

表30 界面活性劑一覽表
Table 30 List of Surfactants

CAS No.	簡稱 Abbreviation	名稱 Names
68783-78-8	DTDMAC	雙牛油烷基二甲基氯化銨/二牛脂基二甲基氯化銨 Dimethyl ditallow ammonium chloride
107-64-2	DODMAC DSDMAC	雙硬脂酰基二甲基氯化銨/二硬脂基二甲基氯化銨 Dioctyldimethylammonium chloride/ Distearyl dimethyl ammonium chloride
61789-80-8	DHTDMAC	雙(氫化牛油烷基)二甲基氯化銨/二(硬化(動物)脂基)二甲基氯化銨 Dihydrogenated tallow dimethyl ammonium chloride
127-19-5	DMAC	N,N-二甲基乙酰胺 N,N-dimethylacetamide

表31 包裝材料和零件一覽表
Table 31 List of Packaging components and materials

項目 #	名稱 Names	說明 Description
1	紙箱 Carton	各種材料製成的紙箱,輔助紙箱,主紙箱,彩盒 All kinds of carton made from any material, such as master carton, sub-master and gift box.
2	緩衝材 Cushion	
3	防護帶(布) Protection bag/sheet	泡沫塑料或不織布,氣泡袋,EPE,淋膜袋(布) Blister packs, EPE (Expanded Polyethylene), and those made from foamed plastic or non woven fabric
4	塑料袋 Poly bag	如PE袋,防靜電袋 Such as PE (Polyethylene) bag and ESD bag
5	信封 Envelope	如裝保證書的信封等 Such as used for certificate or warranty card
6	泡罩包裝 Blister pack	
7	托盤 Tray	托盤,真空成型泡殼 Tray, vacuum formed sponge
8	膠片(薄膜) Film	包含液晶螢幕表面等貼附的保護膠片 Including protection films such as used for the LCD displays
9	對折泡殼 Clamshell	
10	銘板 Model number label	
11	隔板 Separator/Spacer/Partition	紙,EPE,EPS 類 Such as paper, EPE, and EPS (Expanded Polystyrene)
12	印刷油墨 Printing ink	如用於包裝材料印刷的油墨 Such as used for printing on packaging materials
13	膠帶 Tape	如用於紙箱,塑料袋封裝的膠帶 Such as used for closing carton or poly bag, or, fixing or protection for removable component
14	固定釘(U形釘) Staple	用於紙箱打釘 Such as the applications for carton spiking
15	標籤 Label	如條碼,安規,警告標語等 Such as bar-code labels, safety marks or warning signals stuck on the packaging component
16	膠(接頭) Joint	如用於紙箱膠合 Carton joint
17	細綁帶(打包帶) Binding band	如PP帶子等 Such as PP (Polypropylene) band
18	掛鉤(hang tab)	
19	棧板 Pallet	木棧板,膠合棧板 Such as wooden pallet and plastic pallet
20	手提把 Carrying handle	提手及其構成零件 Including its related components
21	外框 Crate	木框等 Such as wooden frame
22	袖套 Color sleeve	紙類印刷,PET 類 Such as printed paper or PET (Polyethylene Terephthalate)
23	收縮膜 Shrink film	
24	瓶 Bottle	
25	套筒 Sleeve	
26	裝飾箱 Jewel box	例如裝鋼筆或化妝品的裝飾箱 Such as packaging for fountain pen
27	防滑墊 Skid	
排外項目 Exemptions	● 運輸公司或零件交貨廠商的管理下回收且再次使用的物流箱的包裝零件及材料為排外項目。在此所指的物流箱不包含在由光寶內部或終端用戶廢棄的包裝材料中。The definition excludes the components and materials for the returnable boxes, which are reused or recycled under the control of carriers or parts suppliers, and are not disposed of by end-users or LITE-ON.	

表32 REACH 高關注物質清單 (163項)

Table 32 List of REACH SVHC (163 items)

Items	CAS No.	EC NO.	物質 Substance
1	120-12-7	204-371-1	蒽 (Anthracene)
2	101-77-9	202-974-4	4,4'-二胺基二苯甲烷 (4,4'-Diaminodiphenylmethane)
3	7546-79-9	231-589-4	二氯化鈷 Cobalt dichloride
4	1303-28-2	215-116-9	五氧化二砷 Diarsenic pentaoxide
5	1327-53-3	215-481-4	三氧化二砷 Diarsenic trioxide
6	7789-12-0	234-190	重鉻酸鈉 Sodium dichromate
7	81-15-2	201-329-4	二甲苯麝香 5-tert-butyl-2,4,6-trinitro-m-xylene xylene)
8	84-74-2	201-557-4	鄰苯二甲酸二丁酯 (DBP) Dibutyl Phthalate (DBP)
9	117-81-7	204-211-0	鄰苯二甲酸二(2-乙基己基)酯 Bis (2-ethyl(hexyl)phthalate) (DEHP)
10	85-68-7	201-622-7	鄰苯二甲酸丁酯苯甲酯(BBP) Benzyl butyl phthalate (BBP)
11	25637-99-4	247-148-4	六溴環十二烷 及其異構物 Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β -HBCDD, γ -HBCDD)
12	85535-84-8	287-476-5	短鏈氯化石蠟 Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCPs)
13	56-35-9	200-268-0	氧化三丁錫 Bis(tributyltin) oxide (TBTO)
14	7784-40-9	232-064-2	砷酸氫鉛 Lead hydrogen arsenate
15	15606-95-8	427-700-2	三乙砷酸酯 Triethyl arsenate
16	121-14-2	204-450-0	二硝基甲苯 2,4-Dinitrotoluene
17	90640-80-5	292-602-7	蒽油 Anthracene oil
18	91995-17-4	295-278-5	蒽油、蒽糊、輕油 Anthracene oil, anthracene paste, distn. Lights
19	91995-15-2	295-275-9	蒽油、蒽糊、蒽鹼分離液 Anthracene oil, anthracene paste, anthracene fraction
20	90640-82-7	292-604-8	蒽油、含蒽量少 Anthracene oil, anthracene-low
21	90640-81-6	292-603-2	蒽油、蒽糊 Anthracene oil, anthracene paste
22	84-69-5	201-553-2	鄰苯二甲酸二異丁酯 Diisobutyl phthalate
23	7758-97-6	231-846-0	鉻酸鉛 Lead chromate
24	12656-85-8	235-759-9	紅色鉬鉻酸鉛硫酸鹽 Lead chromate molybdate sulfate red (C.I. Pigment Red 104)
25	1344-37-2	215-693-7	黃色硫化鉻酸鉛 Lead sulfochromate yellow (C.I. Pigment Yellow 34)
26	115-96-8	204-118-5	三(2-氯乙基)磷酸酯 Tris(2-chloroethyl)phosphate
27	65996-93-2	266-028-2	焦煤瀝青、高溫 Pitch, coal tar, high temperature
28	79-01-6	201-167-4	三氯乙烯 Trichloroethylene
29	10043-35-3, 11113-50-1	233-139-2, 234-343-4	硼酸 Boric acid
30	1303-96-4, 1330-43-4, 12179-04-3	215-540-4	硼砂 Disodium tetraborate, anhydrous
31	12267-73-1	235-541-3	水合硼酸鈉 Tetraboron disodium heptaoxide, hydrate
32	7775-11-3	231-889-5	鉻酸鈉 Sodium chromate
33	7789-00-6	232-140-5	鉻酸鉀 Potassium chromate
34	7789-09-5	232-143-1	重鉻酸銨 Ammonium dichromate
35	7778-50-9	231-906-6	重鉻酸鉀 Potassium dichromate
36	79-06-1	201-173-7	丙烯醯胺 Acrylamide
37	10124-43-3	233-334-2	硫酸鈷 (II) Cobalt(II) sulphate
38	10141-05-6	233-402-1	硝酸鈷 (II) Cobalt(II) dinitrate
39	513-79-1	208-169-4	碳酸鈷 (II) Cobalt(II) carbonate
40	71-48-7	200-755-8	醋酸鈷 (II) Cobalt(II) diacetate
41	109-86-4	203-713-7	2-甲氧基乙醇 2-Methoxyethanol
42	110-80-5	203-804-1	2-乙氧基乙醇 2-Ethoxyethanol
43	1333-82-0	215-607-8	三氧化鉻 Chromium trioxide

44	7738-94-5, 13530-68-2	231-801-5, 236-881-5	由三氧化鉻和其他低聚物形成的酸類:鉻酸/ 重鉻酸/ 鉻酸和重鉻酸的低聚物 Acids generated from chromium trioxide and their oligomers: Chromic acid/ Dichromic acid/ Oligomers of chromic acid and dichromic acid
45	111-15-9	203-839-2	乙二醇乙醚醋酸酯 2-Ethoxyethyl acetate
46	7789-06-2	232-142-6	鉻酸鋇 strontium chromate
47	68515-42-4	271-084-6	鄰苯二甲酸二 (C7-11支鏈與直鏈) 烷基酯 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters
48	302-01-2, 7803-57-8	206-114-9	聯氨 Hydrazine
49	872-50-4	212-828-1	N-甲基吡咯烷酮 1-methyl-2-pyrrolidone
50	96-18-4	202-486-1	1,2,3-三氯丙烷 1,2,3-Trichloropropane
51	71888-89-6	276-158-1	鄰苯二甲酸二 (C6-8支鏈與直鏈) 烷基酯, 富C7 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich
52	24613-89-6	246-356-2	鉻酸鉻 Dichromium tris(chromate)
53	11103-86-9	234-329-8	氫氧化鉻酸鉍鉍 Potassium hydroxyoctaoxodizincatedi-chromate
54	49663-84-5	256-418-0	C.I.顏料黃 36 Pentazinc chromate octahydroxide
55	P-0038	650-017-008-c	矽酸鋁、陶瓷耐火纖維 Aluminosilicate, Refractory Ceramic Fibres a)oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight a)鋁和矽的氧化物為主要組成 b)纖維長度加權幾何平均直徑須小於2個標準差6µm或更小 c)鹼性氧化物和鹼土氧化物 (Na2O+K2O+CaO+MgO+BaO) 含量小於或等於18%的重量
56	P-0039	650-017-008-d	a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight a)鋁、矽和鉍的氧化物為主要組成 b)纖維長度加權幾何平均直徑須小於2個標準差6µm或更小 c)鹼性氧化物和鹼土氧化物 (Na2O+K2O+CaO+MgO+BaO) 含量小於或等於18%的重量
57	25214-70-4	500-036-1	甲醛和苯胺聚合物 Formaldehyde, oligomeric reaction products with aniline (technical MDA)
58	117-82-8	204-212-6	鄰苯二甲酸二甲氧乙酯 Bis(2-methoxyethyl) phthalate
59	90-04-0	201-963-1	鄰甲氧基苯胺 2-Methoxyaniline; o-Anisidine
60	140-66-9	205-426-2	對特辛基苯酚 4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)
61	107-06-2	203-458-1	1,2-二氯乙烷 1,2-Dichloroethane
62	111-96-6	203-924-4	二甘醇二甲醚 Bis(2-methoxyethyl) ether
63	7778-39-4	231-901-9	砷酸 Arsenic acid
64	7778-44-1	231-904-5	砷酸鈣 Calcium arsenate
65	3687-31-8	222-979-5	砷酸鉛 Trilead diarsenate
66	127-19-5	204-826-4	N,N-二甲基乙醯胺 N,N-dimethylacetamide (DMAC)
67	101-14-4	202-918-9	4,4'-二氨基-3,3'-二氯二苯甲烷, 2,2'-dichloro-4,4'-methylenedianiline (MOCA)
68	77-09-8	201-004-7	酚酞 Phenolphthalein
69	13424-46-9	236-542-1	疊氮化鉛 Lead azide Lead diazide
70	15245-44-0	239-290-0	收斂酸鉛 Lead styphnate
71	6477-64-1	229-335-2	苦味酸鉛 Lead dipicrate
72	112-49-2	203-977-3	三乙二醇二甲醚 1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)
73	110-71-4	203-794-9	乙二醇二甲醚 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)
74	1303-86-2	215-125-8	三氧化二硼 Diboron trioxide
75	75-12-7	200-842-0	甲醯胺 Formamide
76	17570-76-2	401-750-5	甲基磺酸鉛 Lead(II) bis(methanesulfonate)
77	2451-62-9	219-514-3	異氧尿酸三縮水甘油酯 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (TGIC)
78	59653-74-6	423-400-0	β 型異氧尿酸三縮水甘油酯 1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)
79	90-94-8	202-027-5	4,4'-二(N,N-二甲胺基) 二苯甲酮 4,4'-bis(dimethylamino)benzophenone (Michler's ketone)
80	101-61-1	202-959-2	4,4'-亞甲雙(N,N-二甲胺基) N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)

81	2580-56-5	219-943-6	[4-[[4-(二氨基)-1-萘基]4-(二氨基)苯基]亞甲基]環己-2,5-二烯-1-亞基]二甲基氯化銨 (C.I. 鹼性藍 26) [4-[[4-anilino-1-naphthyl]]4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
82	548-62-9	208-953-6	[4-[4,4'-雙(二氨基)二苯亞基]環己-2,5-二烯-1-亞基]二甲基氯化銨 (C.I. 鹼性紫 3) [4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
83	561-41-1	209-218-2	(4,4'-雙(二氨基)-4'--(甲基)三苯基醇) 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
84	6786-83-0	229-851-8	α,α-雙[4-(二氨基)苯基]-4-(苯基)-1-萘甲醇 (C.I. 溶劑藍 4) α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
85	1163-19-5	214-604-9	十溴聯苯醚 Bis(pentabromophenyl) ether (DecaBDE)
86	72629-94-8	276-745-2	全氟十三酸 Pentacosafuorotridecanoic acid
87	307-55-1	206-203-2	全氟十二烷酸 Tricosafuorododecanoic acid
88	2058-94-8	218-165-4	全氟十一烷酸 Henicosafuoroundecanoic acid
89	376-06-7	206-803-4	全氟代十四酸 Heptacosafuorotetradecanoic acid
90	P-0036	category 1	辛基酚聚醚-9，包括界定明確的物質以及UVCB物質、聚合物和同系物 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated -covering well-defined substances and UVCB substances, polymers and homologues
91	P-0037	category 2	分支或線性的壬基酚，含有線性或分支、共價綁定苯酚的9個碳烷基鏈的物質，包括UVCB物質以及任何含有獨立或組合的界定明確的同分異構體的物質 4-Nonylphenol, branched and linear - substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof
92	123-77-3	204-650-8	偶氮二甲醯胺 Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))
93	85-42-7, 13149-00-3, 14166-21-3	201-604-9	順環己烷-1,2-二羧酸酐 Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)
94	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	247-094-1, 243-072-0, 256-356-4, 260-566-1	甲基六氫苯酐、4-甲基六氫苯酐、甲基六氫化鄰苯二甲酸酐、3-甲基六氫苯二甲酸酐 Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride
95	625-45-6	210-894-6	甲氧基乙酸 Methoxy acetic acid
96	84777-06-0	284-032-2	1,2-苯二羧二戊酯（支鏈和直鏈） 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear
97	605-50-5	210-088-4	鄰苯二甲酸二異戊酯 Diisopentylphthalate (DIPP)
98	776297-69-9	category 3	鄰苯二甲酸正戊基異戊基酯 N-pentyl-isopentylphthalate
99	629-14-1	211-076-1	乙二醇二乙醚 1,2-Diethoxyethane
100	68-12-2	200-679-5	N,N-二甲基甲醯胺 N,N-dimethylformamide; dimethyl formamide
101	683-18-1	211-670-0	二丁基錫 Dibutyltin dichloride (DBT)
102	51404-69-4	257-175-3	城式乙酸鉛 Acetic acid, lead salt, basic
103	1319-46-6	215-290-6	城式碳酸鉛 Basic lead carbonate (trilead bis(carbonate)dihydroxide)
104	12036-76-9	234-853-7	城式硫酸鉛 Lead oxide sulfate (basic lead sulfate)
105	69011-06-9	273-688-5	二鹽基鄰苯二甲酸鉛 [Phthalato(2-)]dioxotrilead (dibasic lead phthalate)
106	12578-12-0	235-702-8	雙(十八酸基)二氧代三鉛 Dioxobis(stearato)trilead
107	91031-62-8	292-966-7	C16-18-脂肪酸鉛鹽 Fatty acids, C16-18, lead salts
108	13814-96-5	237-486-0	氟硼酸鉛 Lead bis(tetrafluoroborate)
109	20837-86-9	244-073-9	氨基氰鉛鹽 Lead cyanamidate

110	10099-74-8	233-245-9	硝酸鉛 Lead dinitrate
111	1317-36-8	215-267-0	氧化鉛 Lead oxide (lead monoxide)
112	1314-41-6	215-235-6	四氧化三鉛 Lead tetroxide (orange lead)
113	12060-00-3	235-038-9	鈦酸鉛 Lead titanium trioxide
114	12626-81-2	235-727-4	鈦酸鉛銻 Lead Titanium Zirconium Oxide
115	12065-90-6	235-067-7	氧化鉛與硫酸鉛的複合物 Pentalead tetraoxide sulphate
116	8012-00-8	232-382-1	顏料黃41 Pyrochlore, antimony lead yellow
117	68784-75-8	272-271-5	摻雜鉛的矽酸鋇 Silicic acid, barium salt, lead-doped
118	11120-22-2	234-363-3	矽酸鉛 Silicic acid, lead salt
119	62229-08-7	263-467-1	亞硫酸鉛(II) Sulfurous acid, lead salt, dibasic
120	78-00-2	201-075-4	四乙基鉛 Tetraethyllead
121	12202-17-4	235-380-9	三域式硫酸鉛 Tetralead trioxide sulphate
122	12141-20-7	235-252-2	磷酸氧化鉛 Trilead dioxide phosphonate
123	110-00-9	203-727-3	呋喃 Furan
124	75-56-9	200-879-2	環氧丙烷 Propylene oxide; 1,2-epoxypropane; methyloxirane
125	64-67-5	200-589-6	硫酸二乙酯 Diethyl sulphate
126	77-78-1	201-058-1	硫酸二甲酯 Dimethyl sulphate
127	143860-04-2	421-150-7	3-乙基-2-甲基-2-(3-甲基丁基) 噁唑烷 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine
128	88-85-7	201-861-7	地樂酚 Dinoseb
129	838-88-0	212-658-8	4,4'-二氨基-3,3'-二甲基二苯甲烷 4,4'-methylenedi-o-toluidine
130	101-80-4	202-977-0	4,4'-二氨基二苯醚 4,4'-oxydianiline and its salts
131	60-09-3	200-453-6	4-氨基偶氮苯 4-Aminoazobenzene; 4-Phenylazoaniline
132	95-80-7	202-453-1	2,4-二氨基甲苯 4-methyl-m-phenylenediamine (2,4-toluene-diamine)
133	120-71-8	204-419-1	2-甲氧基-5-甲基苯胺 6-methoxy-m-toluidine (p-cresidine)
134	92-67-1	202-177-1	4-氨基聯苯 Biphenyl-4-ylamine
135	97-56-3	202-591-2	鄰氨基偶氮甲苯 o-aminoazotoluene
136	95-53-4	202-429-0	鄰甲基苯胺 o-Toluidine; 2-Aminotoluene
137	79-16-3	201-182-6	N-甲基乙酰胺 N-methylacetamide
138	106-94-5	203-445-0	溴代正丙烷 1-bromopropane; n-propyl bromide
139	7440-43-9	231-152-8	鎘 Cadmium
140	1306-19-0	215-146-2	氧化鎘 Cadmium oxide
141	3825-26-1	223-320-4	全氟辛酸鈹 Ammoniumpentadecafluorootanoate (APFO)

142	335-67-1	206-397-9	全氟辛酸 Pentadecafluorooctanoic acid (PFOA)
143	131-18-0	205-017-9	鄰苯二甲酸二戊酯 Dipentyl phthalate (DPP)
144	P-0035	category 4	支鏈及直鏈乙氧基壬基酚-包括含有9個碳烷基鏈及所有含有含直鏈或支鏈之9個碳烷基鏈 UVCB物質、聚合物及同系物，包括獨立同分異構物及複合物 4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]
145	1306-23-6	215-147-8	硫化鎘 Cadmium sulphide
146	573-58-0	209-358-4	C.I. 直接紅 28 Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)
147	1937-37-7	217-710-3	C.I. 直接黑 38 Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)
148	84-75-3	201-559-5	鄰苯二甲酸二己酯 Dihexyl phthalate
149	96-45-7	202-506-9	亞乙基硫脲 Imidazolidine-2-thione (2-imidazoline-2-thiol)
150	301-04-2	206-104-4	醋酸鉛 Lead di(acetate)
151	25155-23-1	246-677-8	磷酸三(二甲苯)酯 Trixylyl phosphate
152	68515-50-4	271-093-5	支鏈和直鏈的1,2-苯二甲酸二己酯 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear
153	P-0065	239-172-9 and 234-390-0	過硼酸鈉 Sodium perborate; perboric acid, sodium salt
154	7632-04-4	231-556-4	過氧偏硼酸鈉 Sodium peroxometaborate
155	10108-64-2	233-296-7	氯化鎘 Cadmium chloride
156	7790-79-6	232-222-0	氟化鎘 Cadmium fluoride
157	10124-36-4; 31119-53-6	233-331-6	硫酸鎘 Cadmium sulphate
158	3846-71-7	223-346-6	2-(2-羥基-3',5'-二叔丁基苯基)- 苯並三唑(紫外線吸收劑320) 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)
159	25973-55-1	247-384-8	2-(2-羥基-3',5'-二叔戊基苯基)- 苯並三唑(紫外線吸收劑328) 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
160	15571-58-1	239-622-4	二正辛基-双(2-乙基己基巖基乙酯)錫 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)
161	P-0073	—	二正辛基-双(2-乙基己基巖基乙酯)錫和單正辛基-二(2-乙基己基巖基乙酯)錫的反應物 reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)
162	68515-51-5, 68648-93-1	271-094-0, 272-013-1	鄰苯二甲酸二(C6-C6)烷基酯：(癸基，己基，辛基)酯與1,2-鄰苯二甲酸的複合物且鄰苯二甲酸二己酯含量 ≥ 0.3% 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate
163	P-0075	—	5-仲丁基-2-(2,4-二甲基環丁-3-烯-1-基)-5-甲基-1,3-二噁烷[1]，5-仲丁基-2-(4,6-二甲基環己-3-烯-1-基)-5-甲基-1,3-二噁烷[2] [覆蓋任何[1]和[2]或者其任意組合的單獨的異構體(卡拉花醛及其同分易構物)] 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]

*高關注物質清單官網：http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

*SVHC official webpage: http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

*預建議清單 Pre-proposed list:

http://echa.europa.eu/web/guest/registry-of-current-svhc-intentions?p_p_id=substancetypelist_WAR_substanceportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=1&p_p_col_count=3&_substancetypelist_WAR_substanceportlet_cur=1&_substancetypelist_WAR_substanceportlet_delta=20&_substancetypelist_WAR_substanceportlet_keywords=&_substancetypelist_WAR_substanceportlet_advancedSearch=false&_substancetypelist_WAR_substanceportlet_andOperator=true&_substancetypelist_WAR_substanceportlet_orderByCol=intionnotificationroi_svhc_c&_substancetypelist_WAR_substanceportlet_orderByType=desc

intentions?p_p_id=substancetypelist_WAR_substanceportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-

1&p_p_col_pos=1&p_p_col_count=3&_substancetypelist_WAR_substanceportlet_cur=1&_substancetypelist_WAR_substanceportlet_delta=20&_substancetypelist_WAR_substanceportlet_keywords=&_substancetypelist_WAR_substanceportlet_advancedSearch=false&_substancetypelist_WAR_substanceportlet_andOperator=true&_substancetypelist_WAR_substanceportlet_orderByCol=intionnotificationroi_svhc_c&_substancetypelist_WAR_substanceportlet_orderByType=desc

*建議清單 Proposed list

<http://echa.europa.eu/web/guest/proposals-to-identify-substances-of-very-high-concern>

*CMR 致癌、誘導突變、生殖毒性: Carcinogenic(致癌物的), Mutagenic(誘導有機體突變的) or toxic(有毒的) for Reproduction(再生、複製)

*PBT 持久生物累積毒性: Persistent(持續的), Bioaccumulative(生物累積的) and Toxic

*vPvB 非常持久生物累積毒性: very Persistent and very Bioaccumulative

*Light fractions from distillation

** All refractory ceramic fibres are covered by index number 650-017-00-8 in Annex VI of the Regulation on Classification, Labelling and Packaging of chemical substances and

*** C.I.: Colour Index

表33 硼酸、特定硼酸鈉一覽表

Table 33 List of specific phthalates (phthalic esters)

CAS No.	名稱 Names
10043-35-3	硼酸 Boric acid
11113-50-1	硼酸 Boric acid
12179-04-3	五水四硼酸鈉 Disodium tetraborate, anhydrous; Tetraboron disodium heptaoxide pentahydrate
1330-43-4	無水四硼酸鈉 Disodium tetraborate, anhydrous; Tetraboron disodium heptaoxide
1303-96-4	十水四硼酸鈉 (硼砂) Disodium tetraborate, anhydrous; Disodium tetraborate decahydrate; Borax
12267-73-1	七水合四硼酸鈉 Tetraboron disodium heptaoxide, hydrate

表34 稀土金屬一覽表

Table 34 List of Rare earth metal (element)

原子序號 Atomin No.	輕稀土元素 LREE	原子序號 Atomin No.	重稀土元素 HREE
21	Scandium 鈾 Sc	64	Gadolinium 釷 Gd
39	Yttrium 鈮 Y	65	Terbium 鈹 Tb
57	Lanthanum 鐳 La	66	Dysprosium 鐳 Dy
58	Cerium 鈰 Ce	67	Holmium 釹 Ho
59	Praseodymium 鐳 Pr	68	Erbium 鐳 Er
60	Neodymium 鈰 Nd	69	Thulium 釹 Tm
61	Promethium 鉅 Pm	70	Ytterbium 鐳 Yb
62	Samarium 鈰 Sm	71	Lutetium 鐳 Lu
63	Europium 鈰 Eu		

Ref URL http://en.wikipedia.org/wiki/Rare_earth_element

中文參考網址 <http://zh.wikipedia.org/zh-tw/稀土金屬>

<http://www.funddj.com/kmdj/wiki/wikiViewer.aspx?keyid=26cc8a80-c85f-49ae-b632-defe570240cf>

表35 二丁基錫化合物(DBT)所屬物質的例子

Table 35 Examples of Dibutyltin (DBT) compounds

CAS No. EC NO.	化學分子式 Chemical formula	中英名稱 Name
818-08-6	C ₈ H ₁₈ OSn	氧化二丁基錫；二丁基氧化錫 Dibutyltin oxide; Stannane, dibutyloxo-
683-18-1	C ₈ H ₁₈ Cl ₂ Sn	氯化二丁基錫；二丁基氯化錫 Dibutyltin dichloride; Stannane, dibutyldichloro-
77-58-7	C ₃₂ H ₆₄ O ₄ Sn	二月桂酸二丁基錫；二丁基二月桂酸錫 Dibutyltin dilaurate; Stannane, dibutylbis[(1-oxododecyl)oxy]-
7324-74-5	C ₃₀ H ₃₆ O ₈ Sn	二丁基二異辛酸錫；(Z,Z)-8,8-二丁基-3,6,10-三氧代-1-苯基-2,7,9-三氧雜-8-錫雜十三烷-4,11-二烯-13-酸苯基甲酯 Dibutyltin bis(benzylmaleate); Benzyl(Z,Z)-8,8-dibutyl-3,6,10-trioxo-1-phenyl-2,7,9-trioxa-8-stannatrideca-4,11-dien-13-oate
78-04-6	C ₁₂ H ₂₀ O ₄ Sn	馬來酸二丁基錫馬來酸二丁基錫；2,2-二丁基-1,3,2-二氧雜錫卓-4,7-二酮 Dibutyltin maleate; 2,2-Dibutyl-1,3,2-dioxastannepin-4,7-dione
1067-33-0	C ₁₂ H ₂₄ O ₄ Sn	二乙酸二丁基錫；二醋酸二丁基錫 Dibutyltin diacetate; Diacetic acid dibutyltin salt

註：金屬錫、錫合金、電鍍錫、錫的無機化合物不屬於此類

Note: Note: Metal tin, tin alloys, tin plating, and tin inorganic compounds do not fall under this category.

表 36 二辛基錫有機錫化合物(DOT)所屬物質的例子
 Table 36 Examples of Dioctyltin (DOT) compounds

CAS No. EC NO.	化學分子式 Chemical formula	中英名稱 Name
870-08-6	C ₁₆ H ₃₄ OSn	氧化二辛基錫 Dioctyltin oxide
3542-36-7	C ₁₆ H ₃₄ Cl ₂ Sn	二辛基二氯化錫；氯化錫，二氯二辛基 Dioctyltin dichloride; Stannane, dichlorodioctyl-
16091-18-2	C ₂₀ H ₃₆ O ₄ Sn	馬來酸酯辛基錫；2,2-辛基1,3,2-二氧錫雜卓-4,7-二酮； Dioctyltin maleate; 2,2-Dioctyl-1,3,2-dioxastannepin-4,7-dione
26401-97-8	C ₃₆ H ₇₂ O ₄ S ₂ Sn	巰基乙酸異辛酯二正辛基錫；2,2'-[(二辛基亞錫)雙(硫代)]雙乙酸二異辛酯 Di(n-octyl)tin bis(isooctylthioglycolate); Diisooctyl 2,2'-[(dioctylstannylene)bis(thio)]diacetate
3648-18-8	C ₄₀ H ₈₀ O ₄ Sn	二月桂酸二正辛基錫；二月桂酸二辛基錫；二辛基雙[(1-氧代十二烷基)氧]錫 Dioctyltin dilaurates (DOTL); Dioctylbis[(1-oxododecyl)oxy]stannane

註：金屬錫、錫合金、電鍍錫、錫的無機化合物不屬於此類

Note: Note: Metal tin, tin alloys, tin plating, and tin inorganic compounds do not fall under this category.

7. 附件 Attachments

7.1 承認不使用證明: http://gsm.liteonit.com.tw:8080/doc/Non-Use_Certificate_for_Parts_Approval.doc
Certificate of Non-Use of The Controlled Substances (For Parts Approval)

7.2 物質組成宣告 (MCD): <http://gsm.liteonit.com.tw:8080/doc/MCD.xls>
Material Composition Declaration (MCD)

7.3 光寶無鹵標準 (9713100002): <http://gsm.liteonit.com.tw:8080/doc/environment/9713100002.pdf>
LITE-ON Halogen Free Specification (9713100002)

7.4 光寶管控物質不使用證明: http://gsm.liteonit.com.tw:8080/doc/Non-Use_Certificate_for_LOIT.pdf
Certificate of Non-Use of The Controlled Substances (For LITE-ON)

7.5 光寶衝突礦物採購政策: http://gsm.liteonit.com.tw:8080/doc/environment/LOIT_Sourcing_Policy_for_Conflict_Mineral.doc
LITE-ON Sourcing Policy for Conflict Mineral

8. 參考文獻 References

法規名稱 Regulation Name	網站 Website	參考網址 Ref. URL
客戶的環境規範 Customer environment spec	NA	NA
高關注物質建議清單 Proposals to identify SVHC current consultations (SVHC Proposed list)	歐盟化學總署 ECHA	http://echa.europa.eu/web/guest/proposals-to-identify-substances-of-very-high-concern
高關注物質候選清單 SVHC Candidate List table	歐盟化學總署 ECHA	http://echa.europa.eu/web/guest/candidate-list-table

9. 常見問題 FAQ

9.1 本標準是否有網址? Is URL available for this standard?

Ans: 是 Yes, 網址即為最新版 URL beside will always be the latest version: <http://gsm.liteonit.com.tw:8080/doc/environment/9713100001.pdf>